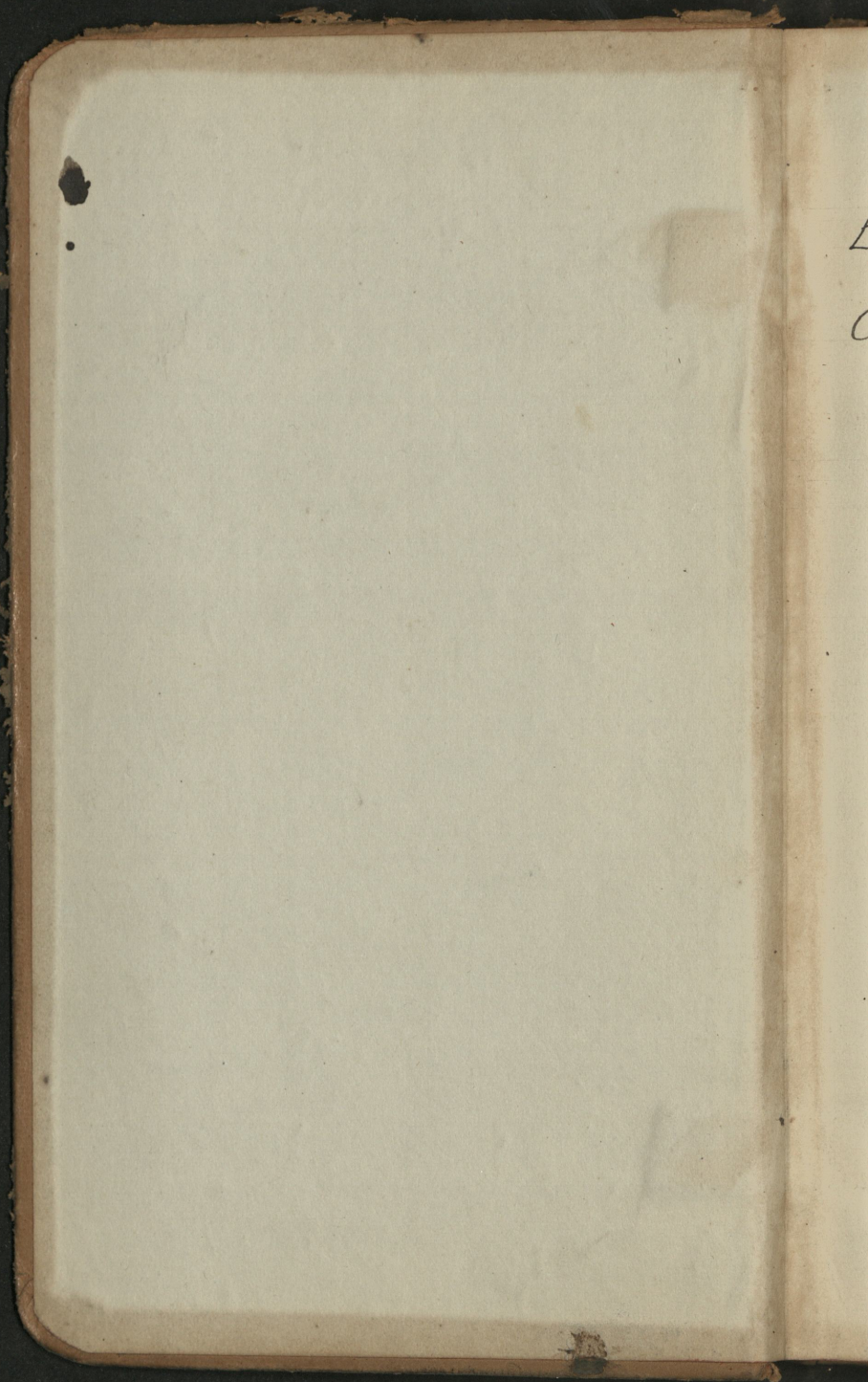


56 B8

LEVEL BOOK.

410.



BRADSHAW MOUNTAIN RAILROAD.

CROWN KING BRANCH

BOOK No. 2

Construction Notes.

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Section 20

Station Grade

L C R

978 3829.59

$\frac{+13.7}{11.4}$ +12.4 $\frac{+10.8}{10.7}$

978+372 3830.71

+60

$\frac{+11.8}{11.0}$ +9.6 $\frac{+7.4}{9.9}$

979

$\frac{+6.7}{9.7}$ +4.6 $\frac{+2.3}{8.6}$

979+212 3833.38

+25

$\frac{+3.8}{9.0}$ +21 $\frac{0.0}{8.0}$

+40

$\frac{0.0}{8.0}$ -1.8 $\frac{-3.9}{12.9}$

980

$\frac{-8.2}{19.3}$ -10.7 $\frac{-12.1}{21.1}$

+75

$\frac{-9.8}{21.7}$ -11.9 $\frac{-13.8}{27.7}$

981+25

$\frac{-11.5}{24.3}$ -13.9 $\frac{-15.4}{30.1}$

982

$\frac{-10.9}{28.4}$ -13.3 $\frac{-15.3}{30.0}$

983 3845.96

$\frac{-6.6}{16.9}$ -8.1 $\frac{-10.6}{22.9}$

Areas Cub Yds Cut Fill Exc Emb

235.02

Sta 978 to 979+40

457.9 Exc 704.5 Cub Yds.

177.12

Class 1/3 ta = 234.8 Cub yds

" 2/3 Lo Rock 469.7 " "

189.0

78.09

Haul 154.5 No. per

51.5 " 550 yds from 978+55

+6980+15 = 880 yds Haul.

33.05 00

61 6.0

00

32.46

704.5

Sta 979+25 to 983+70

357.5 Total Embk 4878.8 Cy.
of which 4032.5 Cy.
was made from

289.29

924.8 Cuts at ends

Balance 846.3

less 5% 42.3

Remains = 804.0 Cy.

376.53

785.9 Class ta 804.0 Cy.

See Page 21

472.23

1276.3

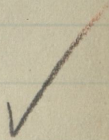
446.81

1237.4

22139

282.2

4870.1



4870.1

Station	Grade	L	C	R
---------	-------	---	---	---

983+60	3847.96	$\frac{-1.5}{9.3}$	-14	$\frac{-3.5}{12.3}$
--------	---------	--------------------	-----	---------------------

16' RB. on L

+70		$\frac{0.0}{16.0}$	-04	$\frac{-2.6}{10.9}$
-----	--	--------------------	-----	---------------------

984		$\frac{+4.5}{17.1}$	00	$\frac{-6.1}{16.2}$
-----	--	---------------------	----	---------------------

+40		$\frac{+3.7}{16.9}$	$\frac{0.0}{3.5}$ -1.6	$\frac{-6.4}{16.6}$
-----	--	---------------------	------------------------	---------------------

+50	C.C.B. +3.33	$\frac{0.0}{16.0}$	-3.8	$\frac{-5.8}{15.7}$
-----	-----------------	--------------------	------	---------------------

+60		$\frac{-4.1}{13.2}$	-4.7	$\frac{-6.8}{17.2}$
-----	--	---------------------	------	---------------------

985		$\frac{-5.6}{15.4}$	-7.7	$\frac{-9.5}{21.3}$
-----	--	---------------------	------	---------------------

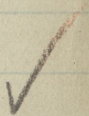
+50		$\frac{-6.8}{17.2}$	-11.6	$\frac{-15.5}{30.3}$
-----	--	---------------------	-------	----------------------

986+25		$\frac{-0.5}{7.8}$	-4.3	$\frac{-5.6}{7.0}$	$\frac{-8.6}{7.0}$	$\frac{-11.5}{24.3}$
--------	--	--------------------	------	--------------------	--------------------	----------------------

986+90	3858.98	$\frac{-3.2}{11.8}$	-5.7	$\frac{-9.5}{21.2}$
--------	---------	---------------------	------	---------------------

Areas Cub. yds
Cut Fill Exc Emb

	32.62	4870.1	
		8.7	
00	14.48	4878.8	
		13.3	19.9
36.00	21.35		Sta 9831+70 to 984+50
			Exc. 60.0 Cub. yds.
		43.8	44.3
			Class 1/3 L.R. = 40 Cy.
			" 1/3 S.R. = 20 "
23.12	38.48		7.2 hauled to job
			52.8 " No "
		2.9	22.0
00	80.53	60.0	Sta 9831+70 to 989+95
			35.2 Embk 3343.7 Cub. y.
	109.59		of which 938.5 was
			made from cuts
			balance 2405.2
		225.0	less 5% 120.2
	194.14		Borrowed 2285.0 Cy.
			Class Earth
			See P. 21
		507.1	
	353.55		
		660.0	
	121.66		
		313.1	
	138.50		
		181.0	
		2007.6	



444

Station Grade

L C R

987 + 15 3859.81

$\begin{array}{r} -4.0 \\ 13.0 \end{array}$ $\begin{array}{r} -6.0 \\ 8.0 \end{array}$ $\begin{array}{r} -11.2 \\ 5.0 \end{array}$ $\begin{array}{r} -13.4 \\ 2.0 \end{array}$ $\begin{array}{r} -13.9 \\ 6.0 \end{array}$ $\begin{array}{r} -10.5 \\ 8.0 \end{array}$ $\begin{array}{r} -8.4 \\ 14.0 \end{array}$ $\begin{array}{r} -8.0 \\ 19.0 \end{array}$

+35

+3.3

$\begin{array}{r} -4.8 \\ 14.2 \end{array}$

-8.7

$\begin{array}{r} -9.6 \\ 7.0 \end{array}$

$\begin{array}{r} -5.9 \\ 10.0 \end{array}$

$\begin{array}{r} -6.0 \\ 16.0 \end{array}$

987 + 53 3861.09

+55

$\begin{array}{r} -4.6 \\ 13.9 \end{array}$

$\begin{array}{r} -6.4 \\ 6.0 \end{array}$

$\begin{array}{r} -8.0 \\ 3.0 \end{array}$

-4.9

$\begin{array}{r} -5.4 \\ 15.1 \end{array}$

988

$\begin{array}{r} -3.9 \\ 12.9 \end{array}$

-5.9

$\begin{array}{r} -7.4 \\ 18.1 \end{array}$

+50

$\begin{array}{r} -5.3 \\ 15.0 \end{array}$

-8.4

$\begin{array}{r} -8.8 \\ 20.2 \end{array}$

989

$\begin{array}{r} -4.2 \\ 13.1 \end{array}$

-6.8

$\begin{array}{r} -9.1 \\ 20.6 \end{array}$

+60

+3.7

$\begin{array}{r} 0.0 \\ 8.0 \end{array}$

-1.4

$\begin{array}{r} -3.3 \\ 12.0 \end{array}$

+95

$\begin{array}{r} +4.0 \\ 9.0 \end{array}$

+1.8

$\begin{array}{r} 0.0 \\ 8.0 \end{array}$

990

$\begin{array}{r} +4.2 \\ 9.0 \end{array}$

+2.2

$\begin{array}{r} +0.5 \\ 8.2 \end{array}$

+25 3869.71

$\begin{array}{r} +5.8 \\ 9.5 \end{array}$

+3.9

$\begin{array}{r} +1.0 \\ 8.2 \end{array}$

Areas Cub.yds.
Cut Fill Exc Emb

4 -80
0 190

252.50

2007.6

158.3

174.81

110.8

124.42

212.9

131.00

303.9

197.19

331.8

161.13

207.4

00

25.55

13.5

11.0

31.30

00

3343.7

6.5

38.92

slip

46.6

12.1

61.71

74.4

7.8

160.9



Station Grade

L C R

990+50 3870.50

+7.9
10.0

+15.6

+13.6
8.9

991

+3.17

+13.4
11.4

+9.8

+5.2
9.3

+61.6

3874.03

+15.2
11.8

+10.9

+5.4
9.4

992+15

+13.6
11.4

+8.9

+2.3
8.6

+55

+7.4
9.9

+3.1

0.0
8.0

+75

0.0
8.0

-2.5

-10.2
22.3

+85

+3.33

-2.2
10.3

-4.8
3.0

-7.4

-32.0
55.0

992+97

-6.4
15.0

-13.9
14.0

-14.3

-26.3
8.0

-29.1
32.5

-21.5
35.0

-21.2
38.8

993+11

-9.6
21.4

-17.5
5.0

-25.8

-23.0
23.0

-16.7
28.0

-19.4
36.1

+30

3879.63

-5.0

14.5

-8.8

-10.1
22.1

Areas Cub. Yds
Cut Fill Exc Emb

9892 160.9 Sta 989+60 to 992+75

slip 72.2
254.4 Exc. 1697.4 Cub. Yds.

175.83

Class Slip Lo R = 274.2 C.Y.
slip 106.3 Balance of Cut S.R. = 1423.2 ✓
426.4

197.94

Have 1093 S. per
" 333.2. "
slip 48.7 " 670 from 990+45 to 998+5 = 1600 ✓
346.6 " 500 " 991+65, 993+05 = 700 ✓
Total have 2300 ✓

152.60

27.1
155.5

57.35 00

00 73.58 14.2 18.2
1612.3
85.10 1/2 S. Sta 992+55 to 996+10
1697.4 79.5 Emb'd 1430.6 Cub. Yds
355.72 made from Cuts at
ends & alongside

263.6

830.30

414.8

769.53

346.0

213.89

56.4

11785

✓

Station Grade

L

C

R

993+42 3880.03

00
80

-1.7

-5.7
15.5

+50 ⁺³³³

+4.0
9.0

+1.2

00 -2.1
3.0 11.2

993+98 3881.90

994+20

+4.2
9.1

+1.7

00 -2.2
4.5 10.3

+75

00
80

-2.8

-9.1
20.7

+80

-1.4
9.1

-3.8

-8.8
20.2

995+15

00
80

-2.1

-6.2
16.3

+50 ⁺³²⁹

+1.3
8.3

00 -0.8
3.0

-3.1
11.7

996+10

+5.0
9.3

+2.2

00
8.0

+30

+9.1
10.3

+4.2

+0.6
8.2

997

+8.8
10.2

+4.5

00
8.0

997+447 3893.31

Areas Cub. Yds
Cut Fill Exc. Emb

00 39.92 2.3 6.7
1178.5
Sta 993+42 to 994+75
Exc 88.4 Cub. Yds.
Class L.R. 88.4 C.Y.
66.8 10.5 Hauled opposite p.w.

28.36 2.75
19.3 76.2

00 72.03 88.4
151

91.37
898

00 47.22
1.4 41.4

3.25 16.73
46.9 12.4

39.03 00 1430.6
43.2

77.65

76.15
199.4
slip 21.8
169.8
slip 14.3
496.8

✓
✓

Station Grade

L

C

R

997+45 3893.32

$\frac{+131}{11.1}$

+6.9

$\frac{+1.9}{8.5}$

+70

$\frac{+140}{11.5}$

+7.4

$\frac{+2.4}{8.6}$

998

$\frac{+105}{10.6}$

+5.6

$\frac{+2.1}{8.5}$

+40

$\frac{+88}{10.2}$

+4.7

$\frac{+2.0}{9.5}$

+60

$\frac{+5.6}{9.4}$

+2.7

$\frac{00}{80}$

+80

+3.33

$\frac{00}{80}$

-5.5

$\frac{14.0}{28.0}$

$\frac{-20.4}{37.6}$

999+05

$\frac{-4.8}{14.2}$

-12.6

$\frac{-19.6}{25.0}$

$\frac{-31.6}{38.0}$

$\frac{-35.4}{54.2}$

+25

$\frac{00}{80}$

-4.0

$\frac{-36.0}{55.0}$

+30

$\frac{+1.5}{8.4}$

$\frac{00}{5.0}$

-3.4

$\frac{-36.0}{55.0}$

+75 3900.98

$\frac{00}{80}$

-5.7

$\frac{-27.1}{47.7}$

Areas Cub. Yds

Cut Fill Exc Emb

127.62

slip 14.4
123.9

Sta 996+15 to 998+80 E.S. 1130.6 Cu.

Class made in regular sections between 996+15 to 998+15 including Solid Rock 795.3 Cub. Yds.

139.97

slip 19.4
135.5

Balance of Cut Class L.O.R. 335.3 " "

103.88

slip 10.3
141.5

Have 57.8 So. free
" 254. H "

" 240 from 996+40 to 993+30 = 768.

" 490 999+150 to 999+20 = 832.
Total have 1600.4

87.15

slip 13.7
49.3

45.89

00

slip 15.7
11.3

36.5

00

148.00

1041.8
888.24 549.6 with 98+45
1130.6

322.6

548.82

Sta 998+60 to 1002+40

296.6 Emb'd 2737.7 Cub. Yds.

00

252.00

Made from Cuts

0.1 44.4

2.25

228.00

1.2 401.3

00

253.60

2.2 260.4

3.5 1361.8

✓

Station Grade

L

C

R

1000+10 3902.14

$\frac{+2.6}{8.7}$ $\frac{00}{40}$ -2.5 $\frac{-2.50}{44.5}$

+25

$\frac{00}{80}$ -30 $\frac{-23.4}{42.1}$

+40

$\frac{+7.3}{9.8}$ +2.3 $\frac{00}{4.5}$ $\frac{-22.6}{40.9}$

+85

$\frac{+7.9}{10.0}$ +3.1 $\frac{00}{3.5}$ $\frac{-15.5}{30.3}$

1001+15

$\frac{+2.1}{8.5}$ $\frac{00}{4.5}$ -1.7 $\frac{-15.4}{30.1}$

+45

$\frac{00}{80}$ -28 $\frac{-17.2}{32.8}$

+60

$\frac{-2.1}{11.1}$ -5.1 $\frac{-28.2}{49.3}$

+85

$\frac{-12.5}{25.8}$ $\frac{-16.0}{14.0}$ -19.9 $\frac{-24.9}{44.5}$

1002+10

$\frac{00}{80}$ -1.2 $\frac{-1.9}{9.9}$

1002+15 3908.81

$\frac{+4.6}{9.2}$ +1.8 $\frac{00}{5.0}$ $\frac{-1.2}{8.8}$

31

Areas Cub yds

Cut Fill Exc Emb

5.20 148.13

3.5 136.8

Sta 999.75 to 1001.45

1.0 84.8 Exc. 127.3 Cub yds.

00 157.05

Class S.R. 127.3

hailed approx. 700

8.4 51.5

45.65 28.25

81.8 46.1

52.53 27.12

31.2 61.4

367 83.31

1.4 111.5

00 117.32 127.3

110.4

280.29

514.9

831.87

393.2

00 17.39

1.9 1.7

31.18 1.20

45.3 0.4

slip 5.7

52.9

2737.7

✓

Station	Grade	L	C	R
---------	-------	---	---	---

1002+40	3909.80	$\frac{+81}{10.0}$	+38	$\frac{00}{80}$
---------	---------	--------------------	-----	-----------------

1003		$\frac{+12.4}{11.1}$	+7.3	$\frac{+3.5}{8.9}$
------	--	----------------------	------	--------------------

+65		$\frac{+13.7}{11.4}$	+7.2	$\frac{+3.1}{8.8}$
-----	--	----------------------	------	--------------------

1004+05		$\frac{+10.6}{10.7}$	+3.3	$\frac{00}{80}$
---------	--	----------------------	------	-----------------

1004+32.5	3916.21			
-----------	---------	--	--	--

+35		$\frac{00}{80}$	-32	$\frac{-16.1}{31.2}$
-----	--	-----------------	-----	----------------------

+85		$\frac{-10.9}{23.4}$	-16.5	$\frac{-20.4}{28.0}$ $\frac{-27.0}{38.0}$ $\frac{-24.2}{43.3}$
-----	--	----------------------	-------	--

+95		$\frac{-7.7}{18.5}$	-9.0	$\frac{-24.0}{43.0}$
-----	--	---------------------	------	----------------------

1005+15		$\frac{-2.7}{11.1}$	-8.9	$\frac{-20.2}{37.3}$
---------	--	---------------------	------	----------------------

+70		$\frac{00}{80}$	-4.2	$\frac{-41.0}{68.5}$
-----	--	-----------------	------	----------------------

1006	3921.59	$\frac{+5.5}{9.4}$	00	$\frac{-16.9}{32.5}$
------	---------	--------------------	----	----------------------

Areas Cub Yds
Cut Fill Exc Emb

666.0 00

52.9
Sta/002+10% 1004+35 Sta/076.0
Class Seip - L.R. = 168.0 Cu. yds.
225.8 Class ^{balance} SR 908.0 Cub. Yds. ✓

136.60

Ship 66.8
332.8

*Haul 258.9 Cu. So. fur
" 700 " from 003+40% 1001+70
= 1190 Haul ✓

139.92

22.0
158.0

7326 00

27.1 441

00 119.07

958.9
117.1 54.
1076.0

741.0 Sta/004+05% 1006+30 ✓

681.25

Emb'd 2055.0 Cub. Yds. ✓

198.0 Made from Cut No.

387.70

253.1

295.53

600.6

00 304.15

81 196.3

22.00 59.15

55.6 21.9
2055.0

63.7

✓

✓ 411

5 Station Grade L C R

1 1006+30 $\overset{3922.56}{\text{red}}$ $\begin{array}{r} +94 \\ 10.4 \end{array}$ +4.4 $\begin{array}{r} 00 \\ 80 \end{array}$

1 +50 $\begin{array}{r} +132 \\ 14.3 \end{array}$ +7.1 $\begin{array}{r} +24 \\ 86 \end{array}$

+80 $\begin{array}{r} +194 \\ 12.9 \end{array}$ +12.6 $\begin{array}{r} +71 \\ 9.8 \end{array}$

1 1007 $\overset{+3.21}{\text{red}}$ $\begin{array}{r} +245 \\ 14.1 \end{array}$ +17.7 $\begin{array}{r} +140 \\ 7.0 \end{array}$ $\begin{array}{r} +107 \\ 10.7 \end{array}$

10 +50 $\begin{array}{r} +250 \\ 14.3 \end{array}$ +17.1 $\begin{array}{r} +11.0 \\ 10.8 \end{array}$

+90 $\begin{array}{r} +20.8 \\ 13.2 \end{array}$ +15.4 $\begin{array}{r} +12.3 \\ 11.7 \end{array}$

1007+99 $\overset{3}{0}$ $\overset{3927.98}{\text{red}}$

1008+05 $\begin{array}{r} +13.5 \\ 11.4 \end{array}$ +13.4 $\begin{array}{r} +10.5 \\ 10.6 \end{array}$

1 +27 $\begin{array}{r} 00 \\ 80 \end{array}$ +3.3 $\begin{array}{r} 00 \\ 80 \end{array}$

+30 $\overset{+3.33}{\text{red}}$ H.B.

Areas Cub. yds
Cut Fill Exc Emb

63.7

78.08 00

slip 8.8

104.3

133.04

slip 45.1

251.5

Sta 1005+70 to 1008+30 $\frac{2710.3}{4}$

Class Slips To Rock 488.1 Cy.

Balance Solid " 2222.2 "

249.01

slip 128.9

227.4 Have 2894 So far

" 1600 from 1007+10% 1004+90 = 3520

" 715. * 1007+85% 1000 = 5610

Total haul 9130

364.98

slip 158.9

669.9

358.60

slip 77.2

502.3

319.51

slip 45.6

156.4

243.40

slip 23.6

109.9

26.40

1.4

2574.9

135.4 SG.

2710.3

0.0



✓

Station Grade
1009 Toe

1009+52 Head Bank

L	C	R
$\frac{-38.7}{60.2}$	-22.7	$\frac{-15.3}{28.0}$

1009+66

$\frac{-33.6}{57.7}$	$\frac{-20.4}{7.0}$	$\frac{-16.4}{7.0}$	$\frac{-11.7}{24.6}$
----------------------	---------------------	---------------------	----------------------

1010+20

$\frac{-31.2}{53.8}$	-4.0	$\frac{0.0}{8.0}$
----------------------	------	-------------------

+50

$\frac{-26.1}{46.2}$	$\frac{0.0}{4.6} + 2.5$	$\frac{+8.8}{10.2}$
----------------------	-------------------------	---------------------

+75

$\frac{0.0}{8.0}$	+5.7	$\frac{+12.7}{11.2}$
-------------------	------	----------------------

1011

$\frac{+1.8}{8.5}$	+9.1	$\frac{+18.0}{12.5}$
--------------------	------	----------------------

+25

$\frac{+3.5}{8.9}$	+13.0	$\frac{+20.0}{13.0}$
--------------------	-------	----------------------

+50

$\frac{+1.6}{8.4}$	+9.8	$\frac{+20.2}{13.1}$
--------------------	------	----------------------

1012

$\frac{+0.5}{8.1}$	+7.3	$\frac{+15.3}{11.8}$
--------------------	------	----------------------

+50

$\frac{0.0}{8.0}$	+5.5	$\frac{+17.4}{12.4}$
-------------------	------	----------------------

1012+85 3944.16

+3.33

Areas Cub yds
Cut Fill Exc Emb

1190.07

1163.7 Sta 1009 to 1010 + 75

547.4 Emb'd 30 v. 7 C.Y.

921.16

Made from cuts N.

1154.0

00 232.80

19.8 147.5

53.58 32.63

73.6 10.1

105.52

00

slip 25.0

30 v. 7

129.7 Sta 1010 + 20 to 1019 + 55

174.75

Exc 7375.3 Cub yds.

190.3 Class Slips Lo. Rock 1262.8 C.Y.

236.35

Balance of Cut

Solid Rock 6112.50

198.6

192.55

Have 467.0 So far

" 337. N "

304.1

" 70. opposite "

slip 30.0

" 1800 from 1013 to 1009 + 55 = 6210.

135.84

" 1330. 1017 to 1450 = 3330.

made 2933.7

242.2

Total have

9540

125.70

slip

147.0

231.8

15921

✓ 491

Station Grade

1013 3944.61

L C R
 $\frac{+1.0}{8.3} +6.3 \frac{+14.5}{11.6}$

+20

$\frac{00}{80} +5.4 \frac{+14.8}{11.7}$

+23

$\frac{-4.0}{12.5} \frac{00}{60} +50 \frac{+14.6}{11.7}$

+45

$\frac{-11.7}{21.6} \frac{00}{30} +2.5 \frac{+11.6}{10.9}$

1013+60

$\frac{-4.8}{13.3} \frac{00}{60} +4.8 \frac{+12.6}{11.2}$

1014+150

$\frac{-9.2}{18.0} \frac{00}{1.5} +1.7 \frac{+8.8}{10.2}$

+25

$\frac{-4.0}{12.5} \frac{00}{50} +30 \frac{+9.8}{10.5}$

+30

$\frac{-0.3}{7.5} \frac{00}{70} +3.5 \frac{+10.0}{10.5}$

+50

$\frac{-1.4}{9.1} \frac{00}{60} +4.3 \frac{+12.5}{11.1}$

+80 3950.03

$\frac{00}{80} +4.8 \frac{+16.3}{12.1}$

Areas	Cubyds.
Cut	Fill Exc. Emb

124.69

1592.1

87.8

112.39

00 slip 70.0

11.9 0.1

102.65

2.00

Sta 1013+20 to 1014+80

63.48

13.80

67.8
slip 15.0

64.4 Emb'd 93.4 Cy.

made from cut opposite

43.2 4.5

91.68

2.40

139.4 19.8

45.15

17.02

20.0 3.9

62.45

4.00

12.3 0.2

70.63

00

58.3 0.2

86.76

0.70

111.2 0.3

113.44

00

93.4

148.7

2377.7

✓ 40A

Station Grade

L

C

R

1015+15 3951.08

+10
8.3

+58

+137
11.4

1015+34 3951.66

+50

+2.4
8.6

+63

+160
12.0

+75

+1.3
8.3

+72

+18.3
12.6

+95

00
8.0

+7.8

+142
11.6

1016+20

+2.5
8.6

+88

+159
12.0

+34

3954.98

+3.6
8.9

+92

+16.5
12.1

+75

+3.0
8.8

+84

+157
11.9

1017

+3.8
9.0

+87

+15.6
11.9

1017+24 3957.68

+50

+4.2
9.1

+93

+16.9
12.2

1018

3959.73

+9.5
10.4

+16.0

+24.9
14.2

Areas	Cubyds
Cut	Exc Emb.

2377.7

115.93

slip 18.0

164.9

138.49

135.2

153.64

106.3

133.24

137.7

164.24

88.5

177.00

257.2

161.74

152.9

168.52

325.9

slip 5.2

183.45

479.5

slip 60.5

334.40

426.3

slip 149.4

4885.2

Station Grade

L

C

R

1018+30 ⁶⁹²3960.53

$\frac{+115}{10.9}$ $\frac{150}{3.0}$ +21.5 $\frac{+306}{15.6}$

+50

$\frac{+126}{11.2}$ +20.6 $\frac{+290}{15.3}$

1019

$\frac{+94}{10.4}$ +16.3 $\frac{+242}{14.1}$

+30

$\frac{00}{8.0}$ +5.6 $\frac{+114}{10.9}$

1019+49⁵ ⁶⁹⁰3963.65

+55

$\frac{-170}{32.5}$ -4.2 $\frac{00}{8.0}$

H.B.
+64

$\frac{-230}{41.5}$ $\frac{-126}{7.0}$ $\frac{-62}{7.0}$ $\frac{-45}{13.8}$

Toe
1020+10

$\frac{-37.2}{7.0}$ 36.0 $\frac{-362}{7.0}$

1020+35⁹ ⁶⁹⁰3966.35

Toe
1020+36

H.B.
1020+86
1020+89+Back

$\frac{-9.7}{21.6}$ 17.0 $\frac{-18.0}{34.0}$

=1020+71³ ⁶⁹⁰3968.13

1020+90

$\frac{00}{8.0}$ -4.1 $\frac{-12.5}{25.8}$

Areas Cubyds
Cut Fill Exc Emb

432.86

488.52

Slip 354.4

323.0

439.35

Slip 337.2

716.1

334.08

Slip 51.1

240.3

98.52

00

30.4 44.6

00

144.55

6937.7

4376.56

(1-1010+204107
1-1017K1019+70)

7375.3

86.0

Sta 1019+30 to 1020+10

371.45

Emb'd 449.0 cy. made

316.4 from Cut So.

449.0

398.6

430.55

Sta 1020+36 to 1021+35

222.5 Emb'd 675.7 cy.

00

113.04

9.6

48.8

made from Cut No.

669.9

✓ 1017

Station Grade

L C R

1021+10

$\frac{+82}{10.1}$ +1.0 $\frac{00}{20}$ -7.5
18.3

+35

$\frac{+16.0}{12.0}$ +4.8 +7.1 $\frac{00}{8.0}$

+50

$\frac{+16.7}{12.2}$ +7.6 $\frac{00}{8.0}$

1022

$\frac{+15.2}{11.8}$ +8.1 $\frac{+26}{8.7}$

+25

$\frac{+18.2}{12.6}$ +11.1 $\frac{+5.5}{9.4}$

+60

$\frac{+23.0}{13.8}$ +9.3 $\frac{+4.1}{9.0}$

1023

$\frac{+23.5}{13.9}$ +14.8 $\frac{+8.0}{10.0}$

+50

$\frac{+24.7}{14.2}$ +15.8 $\frac{+5.4}{9.4}$

+70

$\frac{+25.4}{14.4}$ +14.6 $\frac{+6.3}{9.6}$

1024 3976.36

$\frac{+16.8}{12.2}$ +6.4 $\frac{0.0}{8.0}$

Areas Cuyds

Cut Fill Exc Emb

38.85 18.75

9.6

669.9

82.7

58

139.85 00

675.7

78.7 Sta 1020+90 to 1026+58
Exc. 2688.0 Cuyds.

143.56

Class Slips L.R. 125.2 cy.

275.7 1 matl in original
Section from 1024+25 to

154.23

1026+55 Loose R = 78.0

Balance of cut

171.8 Solid Rock

216.90

Total Loose Rock 203.2

279.6 Solid 2484.8

214.42

Haul 2255 So far

449.5 n

383.2 200 from 1021+80 to 1026+60 = 240

1500 n 1023+10 to 25+80 = 4050

302.86

waste 2069

Slip 18.4

total haul 4490

564.6

Slip 57.5

306.84

Sta 1026 to 1027+75

Slip 31.3

225.5 Embank 5346.2 Cuyds

302.00

Made from Cuts

Slip 18.0

241.0

131.84 00

18.6

15.2

2456.2

Station Grade

L C R

1024+05 3976.48

+11.6
10.9 +3.0 00 -34.0 -34.0
4.5 46.0 58.0

1024+538 3977.70

+55

+6.1 0.0 -34.6 -34.1
9.5 7.0 -0.8 45.0 58.1

1025

+4.1 0.0 -34.2 -34.1
9.0 3.5 -2.3 44.0 58.1

+50

+1.0 0.0 -34.0 -34.1
8.3 6.5 -4.6 42.0 58.1

1026

+2.6 0.0 -34.2 34.0
8.7 5.0 -3.7 39.0 58.0

+55

+2.76

0.0 -5.8 -34.5 34.2
8.0 36.0 58.3

+90

+11.4 0.0 -34.5
10.9 +3.4 2.0 58.8

1027+20

+6.7 0.0 -34.1 34.1
9.7 1.5 -0.9 40.0 59.1

+75

+19.4 0.0
12.9 +7.2 8.0

1028 3987.21

+26.0 +14.7 +4.3
14.5 1.0 +11.1 9.1

Areas Cub. yds.

Cut Fill Exc. Emb

2456.2

15.2

69.50 246.50

84.1 576.0

21.35 375.63

25.5 660.8

9.22 417.28

9.2 851.6

0.75 502.50

4.3 955.3

3.90 529.20

2.6 1188.2

2581.9

106.1

2688.0

00 637.37

29.2 469.0

67.53 86.25

49.6 309.9

21.78 471.51

177.9 320.2

152.84 00

5346.2

196.1

270.83

593.7
slip 73.2

1119.7



Station Grade

L C R

1028+50 3988.59

$\begin{array}{r} +30.2 \\ \hline 15.6 \end{array}$ +17.0 $\begin{array}{r} +8.0 \\ \hline 10.0 \end{array}$

+90

$\begin{array}{r} +32.0 \\ \hline 16.0 \end{array}$ +19.7 $\begin{array}{r} +12.1 \\ \hline 11.0 \end{array}$

1029+25

$\begin{array}{r} +30.2 \\ \hline 15.6 \end{array}$ +16.4 $\begin{array}{r} +8.9 \\ \hline 10.2 \end{array}$

+50
+276

$\begin{array}{r} +30.0 \\ \hline 15.5 \end{array}$ +19.0 $\begin{array}{r} +10.8 \\ \hline 9.0 \end{array}$ $\begin{array}{r} +6.8 \\ \hline 9.7 \end{array}$

+70

$\begin{array}{r} +28.2 \\ \hline 15.1 \end{array}$ +13.3 $\begin{array}{r} +5.8 \\ \hline 9.5 \end{array}$

1029+90

$\begin{array}{r} +26.1 \\ \hline 14.6 \end{array}$ +14.0 $\begin{array}{r} +3.6 \\ \hline 8.9 \end{array}$

1030 3992.73

1030+05

$\begin{array}{r} +25.3 \\ \hline 14.3 \end{array}$ +7.4 $\begin{array}{r} 0.0 \\ \hline 8.0 \end{array}$

+45
+290

$\begin{array}{r} +14.4 \\ \hline 11.6 \end{array}$ +5.6 $\begin{array}{r} 0.0 \\ \hline 3.0 \end{array}$ $\begin{array}{r} -32.2 \\ \hline 35.3 \end{array}$

+85

$\begin{array}{r} 0.0 \\ \hline 8.0 \end{array}$ -5.3 $\begin{array}{r} -35.7 \\ \hline 49.0 \end{array}$ $\begin{array}{r} 35.9 \\ \hline 60.9 \end{array}$

1031 3995.63

$\begin{array}{r} -1.0 \\ \hline 8.5 \end{array}$ -5.7 $\begin{array}{r} -34.0 \\ \hline 48.0 \end{array}$ $\begin{array}{r} -36.0 \\ \hline 61.0 \end{array}$

Areas Cub. yds.

Cut Fill Exc Emb

370.40

1119.7

Sta 1026 + 55 to 1030 + 85

602.0 Exc. 3745.0 Cub yds.

442.35

Class Slips To Rock 155.80 cu.

Balance Cut Solids 3589.21

525.2

367.96

Haul 636. So free

" 50% N "

356.3

" 250. from 1028 + 25 to 1026 + 75 = 420.
" 1800. " 1029 + 20 + 1031 + 35 = 3870.

401.73

Wade 330.1

Total Haul 4490.

259.7

299.59

Slips 226

215.9

283.30

129.6

183.31

00

Ship 60.0

208.5 31.8

Station 1030 + 05 to

Station 1031

98.48

64.40

Embkit 701.5 yds.

48.6 406.4 Made from cuts

00

484.22

3548.1

196.956

3745.0

263.3

463.52

701.5



↓ cut

Section 20

Ditches

Cubic Yards.
Earth Lo. Rock Solid Rock

978 to 980 + 75	Surface Ditch	1x3x300	33.3		51
980 + 75 to 982	"	" 1x3x125	13.9		980
982 " 984 + 10	"	" 2x3½ x 210	36.3	18.1	98
984 + 10 " 984 + 60	Side	" 2x3x50		11.1	99
988 " 990	Slope	" 1x3.5x200	25.9		99
978 " 979 + 40	Side	" R & L		20.7	100
993 + 35 " 996 + 15	"	" L		20.7	100
998 + 60 " 999 + 10	"	" L 2x4x50		14.8	
999 + 25 " 1001 + 45	"	" L		16.3	
			109.4	59.5	42.7

987 + 40 Barrow for dyle 4x6x10 = 8.8 Cy. Ea

998 + 60 to 999 + 0.5 Slope wall or Rip Rap mL - 1.2x1.5x45 = 30 Cy.
 1024 + 55 " 1027 + 20 " }
 Top 2.0x1.5x26.5 } = 126.6 "
 Bottom 3.0x3.3x26.5 }
 Total Slope Wall 129.6 Cy.

ds.
Solid Rock

Box Culverts

Station	Size	Ft. B.M.
980+75	2' x 2 1/2' x 48' inside	1583
987+55	10" x 24" x 29' "	602
11.1 993+25	20" x 26" x 41' "	1186 ✓
998+60	12" x 28" x 14' "	340 ✓
1001+65	10" x 24" x 47' "	853 ✓
1004+50	12" x 24" x 49' "	940 ✓
148	Total — — —	5504

163

422

3.0%

6.6"

9.6%

Section 20

Clearing

Stations to	Station	Width	Sq. ft.
983+50	988 Bmw PFR	90x450	40500
985	998	60	78000
998	1008	65	65000
1009	1015	30	18000
1014	1015+50 Channel	40x150	6000
1015	1017	45	9000
1017	1019+50	65	16250
1021	1033 on orig loc.	60	72000
1021	1024	55	16500
1024	1025	75	7500
1025	1027	90	18000
1027	1028	70	7000
1028	1031	60	18000
853 Acres =			371750

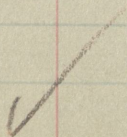
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SECTION 20

PAGE	Acres Cleared	Excavation ~ Cub. Yds.			Total Embank't Cu. Yds.	Cu. Ba from
		Total in Cut Earth	Loose Rock	Solid Rock		
1		704.5 ✓	234.8 ✓	469.7 ✓	4878.8 ✓	
2		60.0 ✓		40.0 ✓	20.0 ✓	3343.7 ✓
4		1697.4 ✓	274.2 ✓	1423.2 ✓	1430.6 ✓	
5		88.4 ✓		88.4 ✓		
6		1130.6 ✓	335.3 ✓	795.3 ✓	2737.7 ✓	
7		127.3 ✓		127.3 ✓		
8		1076.0 ✓	168.0 ✓	908.0 ✓	2055.0 ✓	
9		2710.3 ✓	488.1 ✓	2222.2 ✓		
10		7375.3 ✓	1262.8 ✓	6112.5 ✓	3022.7 ✓	
11					93.4 ✓	
13					449.0 ✓	
13					675.7 ✓	
14		2688.0 ✓	203.2 ✓	2484.8 ✓	5346.2 ✓	
16		3745.0 ✓	155.8 ✓	3589.2 ✓	701.5 ✓	
17		211.1 ✓	109.4 ✓	59.5 ✓	42.2 ✓	8.8 ✓
18	8.53 ✓					
	8.53 ✓	21613.9 ✓	344.2 ✓	3545.0 ✓	17724.7 ✓	24041.6 ✓
						24743.1 ✓
						20943.1 ✓

SUMMARY

Cu. Yds. Bank made from Cuts	Cu. Yds. Shrinkage deducted	Borrow Earth	Cu. Yds. Loose Rock	Cu. Yds. Hauled 100'	F.B.M. Lumber 12 Culverts	Cu. Yds. Slope Wall
4032.5	42.3	804.0		880		
938.5	120.2	2285.0		2300		
1430.6				1600		
2737.7				1190		
2055.0				9130		
3027				9540		
93.4						
449.0						
675.7						
5346.2				4290		
701.5				4290		
		8.8		5504		129.6
207813	162.5	3097.8		33220	5504	129.6
21482.8						



SECTION 20.COST.

CLEARING	, 853 ACRES	@ \$35.00	= 29855
EXCAVATION, EARTH	344.2 CU. YDS.	@ \$0.14	= 48.19
"	, L. ROCK 3545.0	" " " 0.32	= 1134.40
"	, S. ROCK 17724.7	" " " 0.80	= 14179.76
BORROW, EARTH	30978	" " " 0.12	= 371.74
"	, L. ROCK	— — — — —	
HAUL, 100 FT.	33220	" " " 0.015	= 498.30
TIMBER, FT. BM.	5504 FT. BM.	\$12.00	= 66.05
SLOPE WALL,	1296	" " " 2.00	= 2592.0
TOTAL			<u>\$16856.19</u>

298.55

48.19

34.40

179.76

371.74

498.30

66.05

592.0

56.19

Section 20

Cross Sections over borrowed embankment in

Stations	L	C	R
981+50	orig. Surface		
	$\frac{-11.2}{23.8}$	73.5	$\frac{-15.3}{30.0}$
+60	$\frac{-11.3}{23.7}$	$\frac{-11.6}{19.0}$	$\frac{-8.5}{10.0}$
	$\frac{-10.9}{23.4}$	$\frac{-10.8}{21.0}$	$\frac{-8.2}{13.0}$
982			
	$\frac{-8.1}{19.2}$	$\frac{-8.4}{16.0}$	$\frac{-7.0}{12.0}$
+50			
	$\frac{-6.6}{16.9}$	$\frac{-6.8}{13.5}$	$\frac{-4.5}{6.0}$
983			
	$\frac{-3.2}{11.8}$	3.6	$\frac{-5.8}{15.7}$
+40			
+60	$\frac{0.0}{7.0}$		$\frac{0.0}{7.0}$

Cross Sections over Bank in Fill 984+40 to

984+40	$\frac{0.0}{7.0}$		$\frac{0.0}{7.0}$
986+90	$\frac{0.0}{7.0}$		$\frac{0.0}{7.0}$
987+15	$\frac{0.0}{7.0}$	0.7	$\frac{-1.3}{8.0}$
+35	$\frac{-4.7}{14.1}$	2.6	$\frac{-4.8}{14.2}$
+55	$\frac{-4.6}{13.9}$	4.9	$\frac{-5.4}{14.1}$
+75	$\frac{-2.1}{10.2}$	3.7	$\frac{-5.1}{14.7}$
988	$\frac{-3.5}{12.3}$	$\frac{-1.6}{7.0}$	$\frac{-3.0}{9.0}$
+40	$\frac{-5.7}{15.6}$	$\frac{-5.4}{13.5}$	$\frac{-1.9}{6.5}$
+50	$\frac{0.0}{7.0}$		$\frac{0.0}{7.0}$

in Fill Sta. 981+50 to 983+60

Areas	Cub.Yds.
455.90	
	139.5
297.61	
	408.5
253.86	
	430.3
210.91	
	331.7
147.34	
	169.1
81.00	
	30.0
0.0	1509.1

Quantity in Orig. Sec. 2355.4 cu y.
 Still to be made 1509.1
 Made from borrow 846.3 cu y. ✓

40 to

988+50

0.0	
0.0	6.3
136.0	
	31.0
70.04	
	65.2
106.05	
	65.7
71.27	
	52.8
42.79	
	89.5
78.00	
	14.4
0.0	324.9

Quantities in Orig. Sec. 2730.1
 Still to make 324.9
 Made from borrow 2405.2 ✓

Section 21

Borrow Pits.

1062+10	L	R	Areas	Cu.Yds.
= 0	0.0	0.0	0.0	20.5
+15	0.0	$\frac{+4.0}{18} \frac{+5.3}{50} \frac{+5.2}{12.0} \frac{+1.8}{16.0} \frac{0.0}{21.0}$	73.73	41.8
+25	0.0	$\frac{+3.4}{0.8} \frac{+7.3}{18.0} \frac{+6.4}{21.0} \frac{+2.6}{24.0} \frac{0.0}{30.0}$	151.97	173.2
+52	0.0	$\frac{+2.8}{0.7} \frac{+8.0}{26.0} \frac{0.0}{38.0}$	194.92	28.9
+60	0.0	0.0	0.0	<u>264.6</u>

1068+50 ON R

0	0.0	0.0	0.0	12.5
+10	0.0	$\frac{+1.4}{28.0} \frac{+1.4}{55.0} \frac{+2.4}{85.0} \frac{0.0}{100.0}$	134.50	39.2
+15	0.0	$\frac{+2.6}{10.0} \frac{+3.6}{35.0} \frac{+3.0}{65.0} \frac{+2.4}{95.0} \frac{0.0}{110.0}$	288.50	128.5
+25	0.0	$\frac{+2.2}{5.0} \frac{+4.8}{15.0} \frac{+6.0}{50.0} \frac{+3.5}{70.0} \frac{+3.4}{87.0} \frac{0.0}{100.0}$	405.25	248.8
+40	0.0	$\frac{+2.8}{3.0} \frac{+6.7}{20.0} \frac{+7.8}{52.0} \frac{+4.0}{67.0} \frac{+3.0}{87.0} \frac{0.0}{97.0}$	490.45	430.3
+65	0.0	$\frac{+3.6}{4.0} \frac{+7.5}{15.0} \frac{+8.8}{28.0} \frac{+7.5}{38.0} \frac{+7.5}{48.0} \frac{+4.0}{59.0} \frac{+2.0}{71.80}$	438.95	485.9
1	0.0	$\frac{+3.5}{6.0} \frac{+5.8}{8.0} \frac{+8.1}{18.0} \frac{+6.8}{28.0} \frac{+6.0}{43.0} \frac{0.0}{60.0}$	310.80	77.0
+08	0.0	$\frac{+3.8}{6.0} \frac{+6.2}{20.0} \frac{+4.4}{28.0} \frac{+4.2}{41.0} \frac{0.0}{55.0}$	209.10	75.9
+20	0.0	$\frac{+3.2}{5.0} \frac{+3.8}{22.0} \frac{+3.0}{38.0} \frac{0.0}{45.0}$	132.40	20.0
+25	0.0	$\frac{+3.0}{13.0} \frac{+2.2}{20.0} \frac{+3.9}{34.0} \frac{0.0}{41.0}$	83.55	7.7
+30	0.0	0.0	0.0	<u>1525.8</u>

Borrow Pit on R 1071+70 to 1072

	L	R	Areas	Cu. Yds.
1071+70 = 0	0.0	0.0	0.0	
+35	0.0	$\frac{+3.6}{5.0} + \frac{+4.4}{15.0} = \frac{9.0}{20.0}$	88.87	57.6
+60	0.0	$\frac{+5.3}{13.0} + \frac{+5.2}{4.0} + \frac{+5.8}{16.0} = \frac{9.0}{26.0}$	103.82	89.2
+80	0.0	$\frac{+7.7}{19.0} + \frac{+5.5}{7.0} + \frac{+5.4}{20.0} = \frac{9.0}{24.0}$	122.63	83.9
1	0.0	$\frac{+8.5}{21.0} + \frac{+6.4}{6.0} + \frac{+6.8}{20.0} = \frac{9.0}{26.0}$	150.78	101.3
+35	0.0	0.0	0.0	97.7
				429.7

Cross Sections in Cut 1088 to 1090+35 Showing Material Wasted

Stations	L	C	R	Areas	Cu. Yds.
1088	$\frac{0.0}{8.0}$		$\frac{0.0}{8.0}$	0.0	
+50	$\frac{+5.0}{9.2}$	+50	$\frac{+5.0}{9.2}$	86.00	79.6
+75	$\frac{+5.0}{9.2}$	+50	$\frac{+5.0}{9.2}$	86.00	79.6
1089	$\frac{+4.8}{9.2}$	+4.8	$\frac{+4.8}{9.2}$	82.56	78.0
+50	$\frac{+4.9}{10.5}$	+4.9	$\frac{+4.9}{10.5}$	183.15	246.0
1090	$\frac{+2.5}{8.6}$	+2.5	$\frac{+2.5}{8.6}$	41.50	208.0
+35	$\frac{0.0}{8.0}$		$\frac{0.0}{8.0}$	0.0	26.8
					718.0

Figured as being hauled into fill 1080+60
and same amount deducted from borrow

Section 21

Cross Section over borrowed Material in Fill 10794 to

Stations	L	C	R
10794+55	-470 77.5	-434	-432 71.8
+86	original -497 -450 -362 -350 -378 surface 81.1 57.0 36.0 21.0 13.0 398	-424 -41.6 120 694	
1080+06	-480 -450 -270 -271 79.0 60.0 34.0 20.0	-426 -41.4 341 16.0 691	
+12	-488 -448 -270 -266 80.2 64.0 34.0 20.0	-395 -41.5 15.0 693	
+30	-472 -457 -272 -268 77.8 71.0 38.0 15.0	-386 -41.4 328 26.0 691	
+48	-470 -466 -304 -273 77.5 74.0 43.0 12.0	-306 -366 26.6 23.0 61.9	
+75	-402 -356 -324 -300 -233 67.3 57.0 46.0 26.0 11.0	-255 -362 -38.5 22.9 38.0 56.0 64.8	
1081	-385 -345 -238 64.8 42.0 23.0	-18.8 -362 -39.0 20.5 28.0 58.0 65.5	
+10	-385 -352 -353 -244 64.8 55.0 46.0 29.0	-18.1 -18.4 -362 -392 20.5 11.0 38.0 58.0 65.8	
+20	-358 -357 -254 -233 60.7 57.0 33.0 26.0	-21.6 -204 -36.0 -38.4 32.0 57.0 64.6	
+40	-31.0 -31.1 -361 -230 53.5 46.0 36.0 27.0	-264 -346 -35.2 22.6 35.0 57.0 59.8	
+55	-25.1 -25.9 -21.5 44.7 37.6 26.0	-27.2 -31.0 23.6 40.0 58.5	
+70	-20.4 -22.7 -21.7 37.6 27.0 11.0	-26.9 -29.7 22.3 21.0 51.6	
+80	-16.0 31.0	-29.6 23.9 57.4	
1082	-12.0 25.0	-20.6 76.6 37.9	

11 1079

to 1082 Showing Fill made from Creek bottom.

Feet

Cub. Yds.

3555.51

3813.9

3088.02

2096.1

2571.43

5602

2470.45

1584.3

2282.56

1387.0

1878.47

1699.8

1521.12

1305.8

1299.30

460.8

1189.26

442.8

1201.79

938.3

1331.62

719.1

1257.23

691.9

1233.78

440.4

1144.28

659.2

636.17

16799.8

Quantities in Dig. Sections 1079 to 1082 = 25200.4
 16799.8
 5111 to be made
 made from bottom in bottom = 8400.6 Cu.

Haul from Pit on R 1874 hauled 250'
 " " " 1895 " 325'
 " " " 1915 " 300'

Section 21 — Borrow Pit on

Stations

1081+32

= 0

L

C

R

	$\frac{0.0}{20.}$	$\frac{0.0}{20.}$	$\frac{0.0}{20.}$	$\frac{0.0}{20.}$
+10	$\frac{0.0}{26.} \frac{+1.4}{20} \frac{+2.4}{10}$	$+ \frac{+2.5}{2.5} \frac{+1.1}{10.} \frac{0.0}{20.}$		
+20	$\frac{0.0}{38.} \frac{+1.1}{30.} \frac{+5.9}{20} \frac{+7.4}{10}$	$+ \frac{+6.1}{7.1} \frac{+4.5}{10} \frac{+3.4}{20} \frac{+1.1}{30} \frac{0.0}{40}$		
+30	$\frac{0.0}{44.} \frac{+0.7}{40.} \frac{+5.2}{30} \frac{+7.9}{20} \frac{+9.2}{15} \frac{+8.8}{10}$	$+ \frac{+5.6}{7.0} \frac{+5.8}{10} \frac{+5.5}{20} \frac{+4.8}{30} \frac{+2.0}{40} \frac{0.0}{50}$		
+40	$\frac{0.0}{50.} \frac{+1.7}{40} \frac{+3.8}{30} \frac{+5.2}{15} \frac{+7.0}{10}$	$+ \frac{+5.4}{5.8} \frac{+5.3}{10} \frac{+4.5}{20} \frac{+4.7}{30} \frac{+3.1}{40} \frac{+1.2}{50} \frac{0.0}{60}$		
+50	$\frac{0.0}{38.} \frac{+1.8}{30} \frac{+5.3}{20} \frac{+4.6}{10}$	$+ \frac{+4.5}{5.1} \frac{+3.3}{10} \frac{+3.0}{20} \frac{+2.5}{30} \frac{+2.0}{40} \frac{+1.1}{50} \frac{0.0}{60}$		
+60	$\frac{0.0}{34.} \frac{+1.4}{30} \frac{+3.7}{20} \frac{+7.6}{10}$	$+ \frac{+7.4}{8.6} \frac{+8.0}{10} \frac{+7.7}{20} \frac{+6.7}{30} \frac{+4.6}{40} \frac{+3.5}{50} \frac{0.0}{60}$		
+70	$\frac{0.0}{32.} \frac{+0.8}{30} \frac{+5.7}{20} \frac{+8.9}{10}$	$+ \frac{+7.9}{8.3} \frac{+6.8}{10} \frac{+8.1}{20} \frac{+9.9}{30} \frac{+8.8}{40} \frac{+6.0}{50} \frac{+3.0}{60} \frac{0.0}{70}$		
+80	$\frac{0.0}{36.} \frac{+2.1}{30} \frac{+5.7}{20} \frac{+8.8}{7.}$	$+ \frac{+8.3}{7.9} \frac{+7.1}{10} \frac{+8.3}{20} \frac{+7.8}{30} \frac{+7.5}{40} \frac{+7.0}{50} \frac{+5.3}{60} \frac{0.0}{70}$		
+90	$\frac{0.0}{36.} \frac{+1.5}{30} \frac{+4.0}{20} \frac{+6.7}{10}$	$+ \frac{+7.2}{7.1} \frac{+5.4}{10} \frac{+6.2}{20} \frac{+5.8}{30} \frac{+4.4}{40} \frac{+4.8}{50} \frac{+6.6}{60} \frac{+3.2}{70} \frac{0.0}{80}$		
1	$\frac{0.0}{44.} \frac{+0.4}{40} \frac{+2.7}{30} \frac{+5.4}{20} \frac{+7.6}{10}$	$+ \frac{+7.4}{7.4} \frac{+6.4}{10} \frac{+5.8}{20} \frac{+4.4}{30} \frac{+3.4}{40} \frac{+2.4}{50} \frac{+1.0}{60} \frac{+3.0}{70} \frac{0.0}{80}$		
+10	$\frac{0.0}{56.} \frac{+1.4}{50} \frac{+2.3}{40} \frac{+5.3}{30} \frac{+7.8}{20} \frac{+8.2}{10}$	$+ \frac{+7.1}{6.9} \frac{+7.3}{10} \frac{+6.4}{20} \frac{+5.8}{30} \frac{+5.0}{40} \frac{+3.0}{50} \frac{+1.9}{60} \frac{0.0}{70}$		
+20	$\frac{0.0}{62.} \frac{+1.0}{60} \frac{+5.0}{50} \frac{+5.6}{40} \frac{+7.3}{30} \frac{+8.2}{20} \frac{+7.4}{10}$	$+ \frac{+5.3}{8.0} \frac{+8.6}{10} \frac{+8.8}{20} \frac{+7.4}{30} \frac{+7.0}{40} \frac{+6.1}{50} \frac{+5.5}{60} \frac{0.0}{70}$		
+30	$\frac{0.0}{70.} \frac{+2.2}{60} \frac{+4.2}{50} \frac{+6.5}{40} \frac{+7.6}{30} \frac{+8.9}{20} \frac{+8.9}{10}$	$+ \frac{+9.8}{9.1} \frac{+10.4}{10} \frac{+10.7}{20} \frac{+10.2}{30} \frac{+9.4}{40} \frac{+8.9}{50} \frac{+8.1}{60} \frac{0.0}{70}$		
+40	$\frac{0.0}{78.} \frac{+1.3}{70} \frac{+3.3}{60} \frac{+5.6}{50} \frac{+6.8}{40} \frac{+6.5}{30} \frac{+7.9}{20} \frac{+8.5}{10}$	$+ \frac{+10.4}{9.4} \frac{+11.4}{10} \frac{+11.4}{20} \frac{+11.2}{30} \frac{+10.9}{40} \frac{+10.0}{50} \frac{+8.5}{60} \frac{0.0}{70}$		
+50	$\frac{0.0}{80.} \frac{+1.7}{70} \frac{+3.6}{60} \frac{+5.7}{50} \frac{+6.0}{40} \frac{+7.0}{30} \frac{+8.3}{20} \frac{+8.8}{10}$	$+ \frac{+11.1}{9.5} \frac{+11.2}{10} \frac{+11.3}{20} \frac{+11.5}{30} \frac{+11.6}{40} \frac{+11.3}{50} \frac{+10.3}{60} \frac{0.0}{70}$		
+60	$\frac{0.0}{80.} \frac{+1.0}{70} \frac{+2.3}{60} \frac{+3.3}{50} \frac{+5.6}{40} \frac{+5.5}{30} \frac{+7.1}{20} \frac{+8.7}{10}$	$+ \frac{+11.2}{9.8} \frac{+11.5}{10} \frac{+11.8}{20} \frac{+12.4}{30} \frac{+12.6}{40} \frac{+13.6}{50} \frac{0.0}{60}$		
+70	$\frac{0.0}{70.} \frac{+1.1}{60} \frac{+3.1}{50} \frac{+5.6}{40} \frac{+7.1}{30} \frac{+8.3}{20} \frac{+9.7}{10}$	$+ \frac{+11.7}{10.7} \frac{+11.7}{10} \frac{+11.6}{20} \frac{+10.6}{30} \frac{+11.2}{40} \frac{+11.2}{50} \frac{+10.4}{60} \frac{0.0}{70}$		
+80	$\frac{0.0}{60.} \frac{+2.3}{50} \frac{+5.1}{40} \frac{+6.9}{30} \frac{+8.8}{20} \frac{+10.1}{10}$	$+ \frac{+10.8}{10.5} \frac{+11.3}{10} \frac{+11.1}{20} \frac{+11.5}{30} \frac{+12.3}{40} \frac{+13.6}{50} \frac{+11.4}{60} \frac{0.0}{70}$		
+90	$\frac{0.0}{50.} \frac{+3.4}{40} \frac{+5.4}{30} \frac{+7.0}{20} \frac{+7.4}{10}$	$+ \frac{+9.3}{8.4} \frac{+9.2}{10} \frac{+10.8}{20} \frac{+11.7}{30} \frac{+12.2}{40} \frac{+11.2}{50} \frac{+10.5}{60} \frac{0.0}{70}$		

L 1081+32 to 1083+32

Areas Cu. Yds.

0.0

17.6

9570

85.2

364.90

166.3

533.15

191.1

499.00

153.2

328.55

163.8

555.80

237.5

727.20

272.7

745.20

250.1

605.40

224.5

606.65

240.5

692.20

315.2

1009.80

424.5

1282.55

505.7

1448.10

561.6

1584.60

594.9

1627.75

602.0

1623.10

619.7

1723.25

594.4

1486.75

303.5

1528.0

6524.0

Deduct from Borrow Pit 718 cu. yds. wasted from cut Sta 1089+50 and allow Haul in same
Borrow allowed 5806.0

Section 21

Station Grade

1031 3995.63

L	C	R
$\frac{-1.0}{8.5}$	-5.7	$\frac{-34.0}{48.0}$ $\frac{-36.0}{61.0}$

+20

$\frac{-5.0}{14.5}$	-12.3	$\frac{-36.0}{50.0}$ $\frac{-37.0}{62.5}$
---------------------	-------	---

+40

$\frac{-13.2}{26.8}$	$\frac{-22.0}{18.0}$	-26.7	$\frac{-37.2}{62.8}$
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+55

$\frac{-16.0}{31.0}$	$\frac{-19.6}{28.0}$	$\frac{-19.6}{22.6}$	$\frac{-19.6}{14.0}$	$\frac{-35.0}{42.0}$	$\frac{-36.5}{61.8}$
----------------------	----------------------	----------------------	----------------------	----------------------	----------------------

+75

$\frac{-17.3}{33.0}$	$\frac{-16.4}{15.0}$	-8.6	$\frac{-19.7}{25.0}$	$\frac{-35.2}{41.0}$	$\frac{-36.4}{61.6}$
----------------------	----------------------	------	----------------------	----------------------	----------------------

1031+90

+2.90

$\frac{0.0}{8.0}$	+0.5	$\frac{0.0}{3.0}$	$\frac{-3.0}{10.0}$	$\frac{-8.5}{12.0}$	$\frac{-14.0}{22.0}$	$\frac{-36.0}{30.2}$	$\frac{-35.8}{60.9}$
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1032

$\frac{+5.8}{9.5}$	+1.2	$\frac{0.0}{3.0}$	$\frac{-2.4}{9.0}$	$\frac{-9.0}{11.0}$	$\frac{-14.2}{19.0}$	$\frac{-35.9}{30.0}$	$\frac{-37.5}{42.0}$	$\frac{-35.4}{60.1}$
--------------------	------	-------------------	--------------------	---------------------	----------------------	----------------------	----------------------	----------------------

+30

$\frac{+8.5}{10.1}$	$\frac{0.0}{3.0}$	-2.8	$\frac{-22.0}{30.0}$	$\frac{-31.6}{32.0}$	$\frac{37.2}{50.0}$	$\frac{-33.2}{58.6}$
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+50

$\frac{0.0}{8.0}$	-5.6	$\frac{-9.0}{12.8}$	$\frac{-35.2}{28.0}$	$\frac{-37.0}{50.0}$	$\frac{-33.2}{56.8}$
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+65 4000.42

$\frac{-1.3}{9.0}$	-8.9	$\frac{-10.3}{3.0}$	$\frac{-35.0}{27.0}$	$\frac{-35.8}{54.0}$	$\frac{32.8}{56.2}$
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Areas Cub. Yds
Cut Fill Exc Emb

0	463.52	Sta 1031 1/2 1033 + 85
	743.68	447.1 Emb'd 72 + 5.9 C.Y.
	1431.08	Made from Cuts at Ends - 2 on side
		805.5
		736.3
36.5 61.8	1219.75	
		749.0
36.4 61.6	00 802.61	Sta 1031 + 75 to 1032 + 50
		0.5 354.4 Exc. 68.8 Cu. Yds.
60 - 35.8 92 60.7	2.75 473.22	Class Slip L.R. 140 C.Y. Balance S.R. 54.8
		6.2 188.8
-37.5 - 35.4 42.0 60.1	30.70 547.23	Have opposite face
	519	14.0
		289 593.8
-33.2 58.6	21.25 521.68	
		5.2 436.9
70 - 33.2 90 56.8	00 657.96	54.8 14.0 39. 68.8
		416.5
8 32.8 0 56.2	841.38	1026.0
		5754.3

Station Grade

1032+95 4001.29

L C R
 $\frac{-44}{136}$ -13.7 $\frac{-36.3}{31.0}$ $\frac{-37.2}{55.0}$ -34.0
 $\frac{-34.0}{58.0}$

1033+15

$\frac{0.0}{8.0}$ -5.8 $\frac{-36.4}{38.0}$ $\frac{-36.0}{61.0}$

+35

$\frac{+9.0}{10.3}$ +0.8 $\frac{0.0}{1.0}$ $\frac{-36.7}{48.0}$ $\frac{-37.0}{62.5}$

+55

$\frac{+11.4}{10.9}$ $\frac{0.0}{1.0}$ -2.8 $\frac{-36.6}{48.0}$ $\frac{-37.1}{62.7}$

+85

$\frac{+17.6}{12.4}$ +5.6 $\frac{0.0}{8.0}$

1033+95

+2.90

$\frac{+25.4}{14.7}$ +9.5 $\frac{+3.0}{8.8}$

1034+20

$\frac{+33.5}{16.4}$ +17.0 $\frac{+8.0}{10.0}$

1034+40

$\frac{+33.5}{16.4}$ +21.5 $\frac{+13.7}{11.4}$

+60

$\frac{+36.6}{17.2}$ +24.2 $\frac{+14.0}{11.5}$

1034+85

$\frac{+33.0}{16.3}$ +26.0 $\frac{+19.9}{13.0}$

1034+85 4006.81

Areas Cubyds

Cut Fill Exc Emb

5754.3

100536

626.3

00 685.60

10.0 390.9

40.52 370.03

29.8 305.7

39.90 445.46

9.30 168.7

127.52 00

7245.9

65.1 Sta 1033 + 15 to 1037 Exc. 4703.0 Cy.

223.80

Class from 1033 + 15 to 1036 + 15

slips 604

Solid Rock = 3388.8

284.5 Balance of Cut + Slips

Lo. Rock = 1314.2

390.80

slips 168.2

325.4 Haul 665.6 So. fr

487.65

" 350.3 N. "

" 3600. from 1034 + 15 to 1037 + 15 = 8640

slip 161.0

384.2

549.67

slip 253.5

528.8

592.50

321.7
s. 164.1

2849.7

Station Grade

1035 4007.22

L	C	R
$\frac{+33.0}{16.3}$	$+24.7$	$\frac{+18.9}{12.7}$

+50

$\frac{+25.2}{14.3}$	$+17.3$	$\frac{+8.0}{10.0}$
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+65

+290

✓

$\frac{+21.3}{13.3}$	$+9.6$	$\frac{0.0}{8.0}$
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1036

$\frac{+12.2}{11.1}$	$+3.6$	$\frac{0.0}{3.5}$	$\frac{-35.9}{54.9}$
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1036 +61 4011.89

$\frac{+6.3}{9.6}$	00	$\frac{-34.8}{53.4}$
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+290

1037

$\frac{0.0}{8.0}$	-60	$\frac{-34.8}{53.4}$
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1037 +02 4013.08

+30

$\frac{+3.0}{8.8}$	$\frac{0.0}{4.0}$	$\frac{-36.0}{55.0}$
--------------------	-------------------	----------------------

+50

$\frac{+1.5}{8.4}$	$\frac{0.0}{5.0}$	$\frac{-36.5}{55.7}$
--------------------	-------------------	----------------------

+85

+3.08

$\frac{+6.8}{9.7}$	$+1.8$	$\frac{0.0}{3.0}$	$\frac{-21.4}{35.5}$
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1038 4016.10

$\frac{-3.5}{8.9}$	$\frac{0.0}{1.5}$	$\frac{-19.3}{32.7}$
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Areas Cub. Yds.

Cut Fill Exc Emb

2849.7

565.75

Slip

374.4

841.4

343.00

Slip

52.8

147.3

187.44

00

Slip 47.3

170.1 27.1

75.08

62.82

S.

7.5

Sta 1035+65 to 1038+25

113.3 208.6 Embank 1237.8 @ 4.

25.20

121.80

Made from cuts

12.1 309.0 at ends

00

306.00

4615.9 ^{11.56}87.1 ^{1.2}

4703.0

2.2 289.2

6.00

214.50

3.1 165.0

2.25

230.94

530 177.4

38.63

42.80

13.9 35.4

11.38

84.65

35.7 26.1

1237.8

107.9

Station Grade

L

C

R

1038+25 4016.87

$\frac{+81}{10.0}$

+37

$\frac{00}{8.0}$

+50

$\frac{+93}{10.3}$

+46

$\frac{+12}{8.3}$

+80

$\frac{+10.8}{10.7}$

+62

$\frac{+16}{8.4}$

1039

+3.08

$\frac{+70}{9.8}$

+48

$\frac{+12}{8.3}$

+15

$\frac{+15.0}{11.8}$

+9.4

$\frac{+4.5}{9.1}$

+42 4020.47

$\frac{+19.4}{12.9}$

+13.0

$\frac{+71}{9.8}$

1040

$\frac{+21.9}{13.5}$

+13.7

$\frac{+83}{10.1}$

1040+22 4023.19

+40

$\frac{+20.4}{13.1}$

+12.3

$\frac{+6.0}{9.5}$

+60

+3.17

$\frac{+48}{9.2}$

+1.2

$\frac{00}{8.0}$

+62 4024.45

$\frac{+38}{9.0}$

00

$\frac{-3.5}{12.6}$

Areas Cub Yds

Cut Fill Exc Emb

65.70 00

107.9

Sta 1037 to 1040 + 70 Ex 2354.44

69.7 class mail in original

84.78

Sections from 1037 to 1038 + 25

107.6 Loose Rock 107.9 C.Y.

108.81

Class Slip Lo R = 476.4

68.5 Balance of Cut Solid Rock

76.24

Total Lo Rock 584.3 Cub Yds

Slip 5.4

70.1 " Solid " 1770.1

176.23

Slip 29.3

214.9

Haul 204.9 Soft

" 711.2 "

253.55

870 from 10394 to 1037 = 2090

Slip 226.5

575.7

400 + 1039 + 856 + 1041 + 105 = 480

Total Haul 2570

282.46

Slip 201.4

390.4

244.59

Slip 13.8

101.5

29.52 00

1.7 0.3

15.20 12.25

1.5 13.6

2185.9

168.55

2354.4

13.9

✓

Station Grade

L C R

1040+70 4024.70

00
80 -40 -7.6
184

+80

+3.17

-5.8
14.7 -180 -340 -32.8
180 50.7

1041

-21
16.5 -208 -342 -344 -315
180 390 490

1041+120 4026.04

+40

-0.7
7.9 -69 -340 -320
390 49.7

+55

-54
14.2 -77 -158 -340 -310
150 400 483

+70

00
80 -20 -282
446

+75

+2.86

+43
9.1 00 -280
44.3

1042

+10.5
10.6 +35 00 -208
50 38.2

+25

+13.6
11.4 +52 00
80

+50 4030.00

+15.6
11.9 +80 +31
88

Areas Cub Yds

Cut Fill Exc Emb

13.9

00 79.40

199.2 Sta 1040+60 to 1042+25

996.10

Embank 2693.4 Culverts

768.8 Made from Cuts

Each way.

1079.75

1168.1

497.15

277.5

501.92

181.4

00 151.30

1.1 23.1

17.20 98.00

slip 10.0

40.0 55.0

69.30 20.80

slip 10.0

80.6

6.4

104.84 00

2693.4

121.5

157.60

slip 14.2

121.5

slip 36.4

4353

✓ 44

Station Grade

L

C

R

1042+70 4030.63

$\frac{+16.6}{12.2}$

+8.7

$\frac{+3.2}{8.8}$

1043+15

$\frac{+14.4}{11.6}$

+7.5

$\frac{+0.6}{8.2}$

3.17

+30

$\frac{+12.1}{11.0}$

+5.8

$\frac{0.0}{8.0}$

1043+40 4032.85

+60

$\frac{+9.1}{10.3}$

+2.6

$\frac{0.0}{4.5} \frac{-7.6}{18.4}$

3.50

1043+83 4034.34

1044

$\frac{+5.9}{9.5}$

0.0

$\frac{-13.0}{26.5}$

3.22

+50

$\frac{+5.3}{9.3}$

$\frac{0.0}{10} -0.4$

$\frac{-18.8}{35.2}$

1044+91 4037.82

1045

$\frac{+4.3}{9.1}$

$\frac{0.0}{20} -1.5$

$\frac{-24.0}{43.0}$

+50

$\frac{+3.9}{9.0}$

$\frac{0.0}{30} -2.2$

$\frac{-23.6}{42.4}$

2.94

1046

$\frac{+7.4}{9.9}$

+0.9

$\frac{0.0}{1.5} \frac{-18.6}{34.9}$

+45 4042.35

$\frac{+12.8}{11.2}$

+5.4

$\frac{0.0}{8.0}$

Areas Cub Yds.

Cut Fill Exc Emb

435.3

170.55

slip 33.8

254.0

134.25

66.0

103.50 00

88.4 3.5

55.64

9.50

slip

20.0

Sta 1043+30 to 1046+45

58.7

40.7 Emb't 760.9 Cub yds.

23.60 45.50

made from cut in

39.0 109.8 Side.

18.54 73.04

29.1 176.7

12.90 117.75

21.0 231.7

9.75 132.54

41.2 170.1

34.72 51.15

114.8 28.4

103.04 00

760.9

19.6

1220.9

Station Grade

L

C

R

1046+50 4042.50

+13.0
11.3

+5.6

+0.6
8.2

1046+52.2 4042.56

1047

+18.8
12.7

+10.3

+4.4
9.1

+25
+3.22

+18.6
12.6

+11.4

+5.7
9.4

+40

+10.1
10.5

+9.7

+5.0
9.3

1047+60.2 4046.04

+85

+21.2
13.3

+11.7

+4.6
9.2

1048

+3.50

+21.2
13.3

+9.6

+3.6
8.9

1048+46 4049.04

+60

+17.3
12.3

+11.0

+5.0
9.3

+70

+3.18

+17.5
12.4

+9.3

0.0
8.0

1049

+18.2
12.6

+13.3
6.0

+4.4

0.0
4.5

-37.0
62.5

+20 4051.39

+12.7
11.2

+4.8

0.0
4.5

36.9
62.4

Areas Cub. Yd

Cut Fill Exc Emb

1220.9

109.00

slip 120
290.8

205.07

198.0

222.60

105.3

156.43

slip 15.1
326.1

234.83

slip 16.0
122.4

205.76

5.5 Ledge 1.5x10x10 = 5.5

459.7

slip 46.2

208.00

69.0

slip 104.5

164.86

00

Sea 1048 + 70 to 1049 + 40

161.1

17.1 Embk 65.0 Cub. yds.

125.09

46.25

made from cut in

79.1

34.2 Side

slip 22.8

88.48

46.13

43.7

13.5

slip 6.9

3305.1

64.8



✓

Station Grade

L

C

R

1049+354051.87

$\begin{array}{r} +10.0 \\ 10.5 \end{array}$

+4.0

$\begin{array}{r} 00 \\ 4.0 \end{array} \quad \begin{array}{r} -1.7 \\ 9.6 \end{array}$

+40

$\begin{array}{r} +11.3 \\ 10.8 \end{array}$

+5.2

$\begin{array}{r} 00 \\ 8.0 \end{array}$

+50

$\begin{array}{r} +14.0 \\ 11.5 \end{array}$

+7.5

$\begin{array}{r} +2.0 \\ 8.5 \end{array}$

+75

+3.18

$\begin{array}{r} +15.5 \\ 11.9 \end{array}$

+9.9

$\begin{array}{r} +3.2 \\ 8.8 \end{array}$

1050

$\begin{array}{r} +16.0 \\ 12.0 \end{array}$

+11.0

$\begin{array}{r} +7.4 \\ 9.9 \end{array}$

+50

$\begin{array}{r} +16.6 \\ 12.2 \end{array}$

+12.4

$\begin{array}{r} +8.2 \\ 10.1 \end{array}$

1050+52.7 4055.61

1051

$\begin{array}{r} +13.3 \\ 11.3 \end{array}$

+9.5

$\begin{array}{r} +4.6 \\ 9.2 \end{array}$

+85

$\begin{array}{r} +4.1 \\ 8.1 \end{array}$

+1.4

$\begin{array}{r} 00 \\ 8.0 \end{array}$

1052+05

+3.50

$\begin{array}{r} 00 \\ 8.0 \end{array}$

-1.9

$\begin{array}{r} -4.5 \\ 13.8 \end{array}$

+30 4061.82

$\begin{array}{r} -3.4 \\ 12.1 \end{array}$

-6.2

$\begin{array}{r} -13.0 \\ 20.5 \end{array}$

Areas Cub Yds
Cut Fill Exc Emb

3305.1 64.8

69.00 2.55

15.1 0.2

94.08 00

65.0

43.2 Sta 104+70 to 1052+05 Eyr 54270

139.00

Class Slip Lo Rock 622.4 cu.

Balance Solid & 4804.6 "

146.4

177.27

Haul 2835 So free

Slip 28.2 " 464.1 to 1045 "

181.2 " 54.2 to 1059+10 free

" 123.8 " "

214.05

" 850. from 1046+70 to 104+130 = 4590

Slip 96.0 " 170. " 1046+50+1045 = 255

418.1 " 1945. " 1050+25 " 1055+05 = 9335

Wash 185.6

237.46

Total Haul 14180

Slip 77.0

376.3

168.98

Slip 73.3

309.5

27.67 00

68 9.0

00

36.46

5076.2

350.8 = 075.9

5427.0

98.8

177.06

75.8

183.6

S. Station Grade

L C R

10 1052+50 4062.52

00 80 -1.3 -40 13.0

1053 +3.50

+29 87 +1.2 00 40 -13 90

+50

+36 89 +1.6 00 55 -06 79

1053+52 4066.09

+75

+48 92 +29 00 65 -09 84

10 1054+20

00 80 -1.9 -54 15.1

+70

-55 15.3 -90 22.0 40.0

105

H.B.

10 1055+20

-130 26.5 -210 7.0 -22.0 7.0 -248 7.0 -26.0 46.9

+3.26

Toe

+57

-250

10 1056+19

Toe

-244

H.B.

1056+56 4076.00

-272 47.8 -259 25.0 -210 18.0 -209 7.0 -22.3 7.0 -222 7.0 -191 34.9

Areas Cub Yds
Cut Fill Exc Emb

183.6

00 27.65

11.9 27.4 Sta 1052+50 to 1054+20

19.22 1.95

Exp 138.0 Cub yds. Solid

41.8 2.2 Haul 1/2 each way for

25.92 0.45

31.4 0.3

41.97 0.23

Sta 1051+85 to 1055+57

23.3 34.2 Emb'd 2612.6 Cy.

00 40.85

$$\begin{array}{r} 108.4 \\ 29.6 = 1/2 59. \\ \hline 138.0 \end{array}$$

Made from cuts

357.4 So.

345.10

1247.9

1002.65

759.6

2612.6

783.5

1083.90

346.3

1129.8

222-191
7.0 34

Station Grade

L C R

10 1056+65 4076.30

-26.1 -26.0 -21.4 -17.7
46.2 30.0 20.0 -21.3 33.6

1057

-27.0 -26.8 -21.8 -11.0
47.5 47.2 35.0 -14.4 23.5

+30

+3.26

-19.1 -9.8 -6.9
35.7 17.4

+80

-16.4 -10.4 -6.8
31.6 17.2

1058+39⁸ 4081.99

10 1058+40

-14.6 -7.3 -3.5
28.9 12.3

+95

-6.1 -2.1 0.0
16.2 8.0

10

1059+30

0.0 +2.0 +5.0
8.0 9.3

+70

+3.50

+4.0 +6.5 +10.5
9.0 10.6

10 1060

+4.2 +7.2 +11.8
9.1 11.0

+50 4089.34

+5.4 +8.8 +13.2
9.3 11.3

Areas Cub Yds
Cut Fill Exc Emb

994.24

1129.8

Sta 1056+19.8 to 1059+30

1032.6 Emb't 4220.8 Cub. Y.

598.98

749.8 made from

527.9 Cut North, Balance

351.19

3471.0

less 5% 173.5

Borrow 3297.5 @ 4.

635.3

Class 25% L.R. = 824.4

334.96

75% Earth = 2473.1

609.7

213.73

265.3

00 46.76

16.1 20.2

37.30 00

4220.8

117.8 Sta 1058+95 to 1062+75

121.70

Exc. 1514.0 Cub. Yds.

143.4 Class 25% L.R. = 378.5 @ 4.

136.36

75% S.R. = 1135.5

Haul 123.4 to free

279.1 103.9 R. "

" 420. from 1060+10 to 1058+25 = 780

1650.4

" 770. " 1061+10 to 1063+10 = 1540

312.3

Total Haul 2320

868.7

Station Grade

L C R

1061 4091.09 $\begin{array}{r} +49 \\ 92 \end{array}$ +9.5 $\begin{array}{r} +137 \\ 11.4 \end{array}$

+45

$\begin{array}{r} +43 \\ 91 \end{array}$ +8.6 $\begin{array}{r} +130 \\ 11.3 \end{array}$

+85

$\begin{array}{r} 00 \\ 80 \end{array}$ +4.8 $\begin{array}{r} +89 \\ 10.2 \end{array}$

1062+35

$\begin{array}{r} -21.4 \\ 39.1 \end{array}$ -0.8 $\begin{array}{r} 00 \\ 20 \end{array}$ $\begin{array}{r} +32 \\ 88 \end{array}$

+60

$\begin{array}{r} -9.3 \\ 21.0 \end{array}$ $\begin{array}{r} 00 \\ 40 \end{array}$ +1.3 $\begin{array}{r} +2.8 \\ 87 \end{array}$

+75

$\begin{array}{r} -7.7 \\ 18.6 \end{array}$ -1.3 $\begin{array}{r} 00 \\ 80 \end{array}$

1063+05

$\begin{array}{r} -29.4 \\ 51.1 \end{array}$ -12.0 $\begin{array}{r} -12.2 \\ 25.3 \end{array}$

+25

$\begin{array}{r} -30.2 \\ 52.3 \end{array}$ -17.8 $\begin{array}{r} -106 \\ 22.9 \end{array}$

+80

$\begin{array}{r} -6.2 \\ 16.3 \end{array}$ -1.5 $\begin{array}{r} 00 \\ 80 \end{array}$

1064+15

$\begin{array}{r} -1.9 \\ 9.4 \end{array}$ $\begin{array}{r} 00 \\ 50 \end{array}$ +1.3 $\begin{array}{r} +4.0 \\ 9.0 \end{array}$

1064+36 4102.86

Areas Cub Yds
Cut Fill Exc Emb

172.25

274.3

156.92

175.0

79.28 00

82.3

56.4 Sta 1061285 1/1064 + 50

9.60 91.34

Emb Kit 1901.7 Cut Yds

13.4

48.8 1637.1 made from

19.45 13.95

Cuts at ends

264.6 made from

3.6

16.2

measured Pit. P. 22

00

44.24

1417.3
96.7 1/250

Class Borrow

2/3 Ca = 176.4 C.Y.

1/3 L.R. = 88.2 C.Y.

1514.0

360.1

604.00

524.5

812.08

867.8

00

39.93

10.8

27.1

25.10

1.90

43.5

0.8

54.3

1901.7

Station	Grade	L	C	R
1064+50	4103.30	$\frac{00}{8.0}$	+2.4	$\frac{+5.3}{9.3}$
1065		$\frac{+2.6}{8.7}$	+4.6	$\frac{+7.1}{9.8}$
+50		$\frac{+2.6}{8.7}$	+4.4	$\frac{+6.5}{9.6}$
1066		$\frac{+2.0}{8.5}$	+3.2	$\frac{+5.1}{9.4}$
+25		$\frac{00}{8.0}$	+2.1	$\frac{+4.8}{9.2}$
+50	81.3	$\frac{-14.4}{28.6}$	-3.6	$\frac{00}{8.0}$
+80		$\frac{-21.0}{35.8}$	-8.6	$\frac{-3.8}{12.1}$
1067+10		$\frac{-26.0}{46.0}$	-24.4	$\frac{-16.4}{31.6}$
+45		$\frac{-22.7}{41.1}$	-18.4	$\frac{-17.2}{11.0}$ -22.0 40.0
1067+64	4113.31			
+65	4113.41	$\frac{-15.2}{29.8}$	-10.5	$\frac{-6.4}{16.6}$

Areas	Cub Yds
Cut	Fill Exc Emb
41.96	00
	Sta 1063+80 to 1066+50
	114.2 Exc. 547.8 Cub. Yds.
81.35	class 30% Lo. Rock 164.3 Cy.
	70% Solid " 383.5 "
	146.3
76.66	Haul 89.5 So free
	" 127.6 N. "
	" 150. from 1065 to 1063+75 = 190.
	126.0 " 130 " 1065+50 to 1066+80 = 170
	Total Haul 360.
59.44	
	44.8
37.26	00
	11.5 35.9 Sta 1066+25 to 1069+15
00	116.28
	497.1
	50.7 = 155.
	547.8
	235.1 16138 made from
	Cuts at ends
306.96	1525.8 from meas.
	Pism R 1068+50. p.v.
	779.0 class borrow
	$\frac{2}{3}$ Earth 1017.2 Cy.
1095.12	$\frac{1}{3}$ Lo. R. 508.6 "
	1266.4 Haul on borrow = 600. $\frac{2}{3}$
858.77	
	436.2
319.20	
	255.3
	3007.9

Station	Grade	L	C	R
---------	-------	---	---	---

1068	4114.57	$-\frac{71}{17.7}$	-3.3	$-\frac{15}{9.3}$
------	---------	--------------------	------	-------------------

+50	$+\frac{3.50}{14.5}$	-1.4	$\frac{00}{80}$
-----	----------------------	------	-----------------

1068+78 4117.28

1069		$-\frac{01}{8.1}$	$\frac{00}{4.5} + 1.1$	$+\frac{33}{8.8}$
------	--	-------------------	------------------------	-------------------

+15	$\frac{00}{8.0}$	+2.3	$+\frac{4.5}{9.1}$
-----	------------------	------	--------------------

+50	$+\frac{3.4}{8.9}$	+6.1	$+\frac{7.9}{10.0}$
-----	--------------------	------	---------------------

1070	$+\frac{5.2}{9.3}$	+8.1	$+\frac{11.5}{10.9}$
------	--------------------	------	----------------------

+40	$+\frac{3.6}{8.9}$	+6.1	$+\frac{8.8}{10.2}$
-----	--------------------	------	---------------------

+70	$\frac{00}{8.0}$	+1.2	$+\frac{3.0}{8.8}$
-----	------------------	------	--------------------

+78	$-\frac{2.4}{10.6}$	-1.5	$\frac{00}{80}$
-----	---------------------	------	-----------------

1071+20	41253.6	$-\frac{25.7}{45.6}$	-21.0	$-\frac{15.8}{30.7}$
---------	---------	----------------------	-------	----------------------

Areas Cub. yds.
Cut Fill Exc Emb

3007.9

74.65

99.9

00 33.25

12.7 31.6

20.52 0.87

16.2 0.2

37.66 00

3139.6

91.1 Sta 1068+50 to 1070+78 Exc 674.06

102.84

Class 60% Loose Rock 404.4

232.8

40% Solid 269.6

148.61

Have 91.7 So. free

" 125.5 " "

" 400. from 1069+85 to 1067+65 = 880

190.0

107.85

72.2

22.08 00

2.2 2.2

Sta 1070+90 to 1072+05

00 22.37

617.2
56.8-1/2⁵⁶

Emb'kt 1856.4 Cub yds

1426.7 made from

753.5 Cuts at ends.

449.7 from measured

Dir. class burns

777.6 2/3 Earth = 286.5 Cy.

1/3 Lo Rock = 143.2 "

946.40

1533.3

Station Grade

L

C

R

1071+50 ~~4126.36~~

$\frac{-16.8}{32.2}$

-132

$\frac{101}{22.2}$

+85

$\frac{-4.2}{13.3}$

-17

$\frac{00}{80}$

1072+05

$\frac{00}{80}$

+16

$\frac{+3.6}{8.9}$

+50

~~13.34~~

$\frac{+1.7}{8.4}$

+4.4

$\frac{+7.1}{9.9}$

1073

$\frac{+3.4}{8.6}$

+53

$\frac{+9.3}{10.3}$

+50

$\frac{+1.9}{8.5}$

+4.5

$\frac{+10.2}{10.1}$

1074+13 ~~4035.15~~

$\frac{+0.6}{8.2}$

+30

$\frac{+5.1}{9.4}$

+25

$\frac{00}{80}$

+23

$\frac{+4.1}{9.2}$

1075

$\frac{0.6}{7.9}$

$\frac{00}{40}$ +10

$\frac{+3.2}{8.8}$

+05 ~~4038.37~~

$\frac{00}{8.0}$

+17

$\frac{+2.8}{8.7}$

Areas Cub. Yds

Cut Fill Exc Emb

15333

45319

315.0

00 3280

6.9 8.1

1856.4

27.92 00

88.2

Sta 1071+85 to 1076+31 Exc. 8728 Cy.

1071+85 to 1074+50 class max

77.86

70% Lo R = 436.1 Cy. ✓

30% Solid Rock = 187.0 " ✓

165.5

1074+25 to 1076+31 class ✓

100.89

1/2 Earth 124.8 Cy. ✓

177.0 1/2 Lo Rock 124.9 " ✓

90.25

Total Earth 124.8 Cy. ✓

165.5 " Lo Rock 561.0 " ✓

51.60

" Solid " 187.0 " ✓

Hand 110.50 for

20.0 " 828 " "

" 680 from 1073+55 to 1071+35 = 1500. Hand ✓

38.58 00

80.3 0.8

19.20 0.90

4.1 0.1

0.9

25.40 00

58.2

765.7

✓ 24.4

Station	Grade	L	C	R
1075	+47	+16 84	+2.9	+4.4 9.1
	+70	+22 86	+3.7	+4.8 9.2
1076		00 80	+1.8	+3.2 8.8
	+31	-6.5 16.8	-1.5	00 80
	+45	-11.4 24.1	-3.8	-1.5 9.3
	+85	-4.0 13.0	-1.8	00 80
1077	+35	00 80	+1.1	+2.4 8.6
	+80	00 80	+1.2	+2.6 8.7
1078		-3.5 12.3	-2.0	0.0 8.0
	Toe. +13		4.0	

413984

16
84

2.9

4.4
9.1

70

22
86

3.7

4.8
9.2

1076

00
80

1.8

3.2
8.8

31 4142.59

6.5
16.8

1.5

00
80

45

11.4
24.1

3.8

1.5
9.3

85

4.0
13.0

1.8

00
80

310

1077+35

00
80

1.1

2.4
8.6

80

00
80

1.2

2.6
8.7

1078 4147.82

3.5
12.3

2.0

0.0
8.0

H13
1078+07

325

Toe.
+13

4.0

Areas Cub Yds
Cut Fill Exc Emb

49.37

765.7

47.0

60.93

49.4

27.92 00

10.7

15.8

Sta 1076 to 1077 + 35

00 41.35

872.8

Emb'd 1798 C.Y.

made from cuts at
Ends.

38.9

108.61

104.8

00 32.90

11.6

20.3

Sta 1076 + 80 to 1078 + 07

18.73 00

179.8

Exc 51.0 C.Y.

class $\frac{1}{2}$ Ea = 25.5 C.Y. $\frac{1}{2}$ Lo.P. = 25.5 "

32.6

20.42 00

6.8

10.8

51.0

1077 + 80 to 1078 + 13

Emb'd 14.0 C.Y. made
from Cut South.

0.0 32.55

3.2

14.0

✓ 44.4

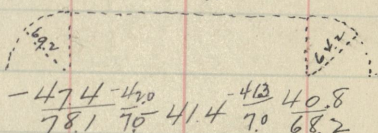
Station Grade

L C R

TOE
1079+91

-448

H.B.
1080+58



+89

-443
73.5 -41.0 -395
66.3

1081+13 4157.99

-398 -407 -389 -379
66.7 36.0 63.9

+50

-28.4 -31.6 -34.3
49.6 58.5

1082

-12.0 -16.6 -20.6
25.0 37.9

+40

0.0 -1.7 -2.8
8.0 11.2

+45

+2.8 +0.3 0.0
8.7 8.0

+75 4162.75

+13.2 +9.5 +6.4
11.2 9.6

Areas Cub yds
Cut Fill Exc Emb

Sta 1079+91 to 1082+45

Emblt 16862.9 Cub yds

43162/2152.3 Cy. made from

3338.23

Cuts North, 6160.0 made

from Measured Pits
see pages 24 & 45
3730.0 Class L.R. 6160.0 C.Y.
150.0 C.Y. made from

3159.20

Earth borrow at Jov

8400.6 C.Y. less 5%
420.0
2673.4 7980.6 Borrowed in
bottom class 90%
Earth = 7182.5 C.Y.

2855.95

10% L.R. = 798.1 "

3277.5

Total Earth = 7332.5 C.Y.
19150.3
" Loose Rock = 6458.1 "

1927.43

2373.7 Haul on Borrow
in Bottom 16588

636.77

Haul on Borrow
from top 5422

490.5 Total Haul = 22010

00 2612

Proccott 1/28/83
Change this class
make it 50% E
50% L.R.

0.8 16

1371 00

16862.9

106.1

3990.3 E
3990.3 L.R.

177.20

82.8

189.7

W. A. C. A. ✓

Section 21

Station	Grade	L	C	R
1082+90	4163.20	+12.9 11.2	+6.3	+1.8 8.5
1083	4163.49	+16.0 12.0	+8.7	3.5 8.0
1083+43.2	4164.78			

Ditches on Sec. 21

Station	Size	Ea	Lo.R	J.R.	Sta
1058 to 1058+95 Slope D.	1x2x95	7.0			103
1071+30 to 1071+85 " " 1x3x55		6.1			104
1071+85 to 1076+35 Side R			25.0	8.3	105
1076+80 to 1077+80 " " R			7.4		106
1080+90 to 1082+40 Slope L 1x3x150		16.7			107
1082+40 to 1083 Side L			4.4		108
		29.8	36.8	8.3	

Section 21

Change of Wagon Roads and Channel

$$1031+60 \div 1032+95 \text{ Evg } \frac{1}{2} (2 \times 8 \times 135) = 50.0 \text{ Cy. Lo Rock}$$

$$1038+40 \div 1035$$

$$1038+40=0 \quad L \quad C \quad R \quad \text{Areas} \quad \text{Cu. Yds.}$$

0	$\begin{pmatrix} 0.0 \\ 3.0 \end{pmatrix}$	0.0	00	00	
+50	$\begin{pmatrix} 0.42 \\ 5.6 \end{pmatrix}$	$\frac{0.0}{3.0} (00)$		672	6.2
+85	$\begin{pmatrix} 0.55 \\ 9.2 \end{pmatrix}$	$\frac{0.0}{5.8} (00)$		1535	14.7
1+20	$\begin{pmatrix} 0.70 \\ 10.0 \end{pmatrix}$	$\frac{0.0}{6.0} (00)$		21.00	23.9
+55	$\begin{pmatrix} 0.72 \\ 9.5 \end{pmatrix}$	$\frac{0.0}{5.0} (00)$		18.00	25.3
2	$\begin{pmatrix} 0.50 \\ 8.2 \end{pmatrix}$	$\frac{0.0}{6.4} (00)$		16.00	28.2
+40	$\begin{pmatrix} 0.62 \\ 8.6 \end{pmatrix}$	$\frac{0.0}{5.5} (00)$		17.05	24.5
+70	$\begin{pmatrix} 0.53 \\ 8.0 \end{pmatrix}$	$\frac{0.0}{5.2} (00)$		1352	17.0
+95	$\begin{pmatrix} 0.62 \\ 9.0 \end{pmatrix}$	$\frac{0.0}{7.0} (00)$		21.70	16.3
3+15	$\begin{pmatrix} 0.40 \\ 6.0 \end{pmatrix}$	$\frac{0.0}{4.0} (00)$		8.40	11.2
+38	$\begin{pmatrix} 0.20 \\ 5.6 \end{pmatrix}$	$\frac{0.0}{2.5} (00)$		2.50	4.2

$$171.9 = \begin{cases} \text{Lo.R. } 86.0 \\ \text{S.R. } 85.9 \end{cases}$$

$$1040+60 \div 1042+70 \text{ Channel}$$

$$1042+70=0$$

$$\frac{0.0}{10.0}$$

$$00$$

+10	$\begin{pmatrix} 0.80 \\ 10.0 \end{pmatrix}$	$\frac{0.0}{8.0} (00)$		32.00	5.9
+45	$\begin{pmatrix} 0.170 \\ 23.0 \end{pmatrix}$	$\frac{0.0}{19.0} (00)$		84.50	75.5
+60	$\begin{pmatrix} 0.190 \\ 27.0 \end{pmatrix}$	$\frac{0.0}{25.0} (00)$		138.50	61.9
+75	$\begin{pmatrix} 0.20 \\ 26.0 \end{pmatrix}$	$\frac{0.0}{14.0} (00)$		140.00	77.4
+95	$\begin{pmatrix} 0.210 \\ 28.0 \end{pmatrix}$	$\frac{0.0}{16.0} (00)$		238.00	140.0
1+25	$\begin{pmatrix} 0.70 \\ 24.0 \end{pmatrix}$	$\frac{0.0}{20.0} (00)$		169.00	226.1

$$135 \left(\frac{0.0}{20.0} \right) (00)$$

$$00$$

$$31.3$$

$$618.1 = \begin{cases} \text{Lo.R. } 618 \text{ Ch.} \\ \text{S.R. } 556.3 \end{cases}$$

Figures in Brackets show original Surface

Change of Road 1052 to 1048+50

	C	R	Areas	Cub Yds.
1052 to 1050	0.0	0.0	0.0	8.3
1052 = 0	0.0	0.0	0.0	13.2
+25	+30 14.0	$\frac{0.0}{12.0}$	0.0	10.50
+50	+30 9.0	$\frac{0.0}{7.0}$	0.0	15.12
+90	+42 9.0	$\frac{0.0}{7.2}$	0.0	6.88
1+15	+25 6.2	$\frac{0.0}{5.5}$	0.0	7.80
+85	+25 7.3	$\frac{0.0}{6.0}$	0.0	15.00
2+60	+30 11.6	$\frac{0.0}{10.0}$	0.0	18.75
+90	+50 12.8	$\frac{0.0}{7.5}$	0.0	6.00
3+35	+32 8.6	$\frac{0.0}{4.0}$	0.0	1.7
3+50	0.0	0.0	0.0	142.5
				Lo.R = 50.704.
				S.R = 91.8 "

1040+50 Dyke on R Borrow $4 \times 14 \times 45 = 93.3 \text{ Cub yds. Lo.R.}$

1049+20 to 1050 Excavate for wall $4 \times 4 \times 74 = 439 \text{ Cu. Lo.R.}$

Slope Wall

1030+55 to 1033

Bottom $3 \times 4 \times 245$
 Top $\left\{ \begin{array}{l} 2 \times 20 \times 45 \\ 2 \times 5 \times 50 \\ 2 \times 2.5 \times 150 \end{array} \right\}$ 161.8 Cub. Yds.

1036+05 to 1037+15 - $2.5 \times 7 \times 110 = 64.2$

1040+50 wall along Dyke $1.5 \times 3.5 \times 50 = 9.7$

1049+20 - $2.5 \times 6.0 \times 74 = 41.1$

Total wall 276.8 Cub yds.

SECTION 21

PAGE	Acres Cleared	Excavation - Cub. Yds.				Total Embank't Cu. Yds.
		Total in Cuts	Earth	Loose Rock	Solid Rock	
25		688	✓	140	✓	548
26		4703.0	✓	1314.2	✓	3388.8
27						1237.8
28		2354.4	✓	584.3	✓	1770.1
29						2693.4
30						760.9
31						65.0
32		5427.0	✓	622.4	✓	4804.6
33		138.0	✓		✓	138.0
34		1514.0	✓	378.5	✓	1135.5
35						4220.8
36		547.8	✓	164.3	✓	383.5
36						3139.6
37		674.0	✓	404.4	✓	269.6
38		872.8	✓	124.8	✓	561.0
39		51.0	✓	25.5	✓	25.5
39						179.8
40						14.0
41		243.4	✓	182.6	✓	60.8
41	7.44	74.9	✓	29.8	✓	36.8
42		171.9	✓	86.0	✓	85.9
42		618.1	✓	61.8	✓	556.3
42		142.5	✓	50.7	✓	91.8
42		43.9	✓	43.9	✓	
42		50	✓	50	✓	
	7.44	17695.5	✓	180.1	✓	4580.4
					✓	12935.0
						42884.1

SUMMARY

Cub. Yds. Bank made from Cuts.	Cu. Yds Shrinkage deducted	Borrow Earth	Cu. Yds Loose Rock	Cu. Yds. Hauled 100'	F.B.M. Lumber in Curbs	Cu. Yds Slope Wall
45.9 ✓	7245.9 ✓			8640 ✓		
37.8 ✓	1237.8 ✓			2570 ✓		
93.4 ✓	2693.4 ✓			14180 ✓		
00.9 ✓	760.9 ✓					
05.0 ✓	65.0 ✓					
2.6 ✓	2612.6 ✓					
20.8 ✓	749.8 ✓	173.5 ✓	2473.1 ✓	824.4 ✓	2320 ✓	
01.7 ✓	1637.1 ✓		176.4 ✓	88.2 ✓		
39.6 ✓	1613.8 ✓		1017.2 ✓	508.6 ✓	360 ✓	
6.4 ✓	1426.7 ✓		286.5 ✓	143.2 ✓	600 ✓	
9.8 ✓	179.8 ✓				880 ✓	
4.0 ✓	14.0 ✓				1500 ✓	
2.9 ✓	2152.3 ✓	420.0 ✓	4140.3 ✓	10150.3 ✓	22010. ✓	
					8308 ✓	
3.3 ✓				93.3 ✓		2768 ✓
4.1 ✓	22389.1 ✓	593.5 ✓	8093.5 ✓	11808.0 ✓	53060 ✓	8308 ✓
						2768 ✓

SECTION 21COST.

PAGE

25 CLEARING, 7 ⁴⁴ ACRES @ \$ 35⁰⁰ = 260.40

26 EXCAVATION, EARTH 180.1 CU. YDS. @ 0.14 = 25.21

27 " , L. ROCK 4580.4 " " " 0.32 = 1465.73

28 " , S. ROCK 12935.0 " " " 0.80 = 10348.00

30 BORROW, EARTH 8093.5 " " " 0.12 = 971.20

31 " , L. ROCK 11808.0 " " " 0.30 3542.40

32 HAUL, 100 FT. 53060 " " " 0.015 = 795.90

33 LUMBER, 8308 FT. B.M. " \$ 12⁰⁰ = 99.7034 SLOPE WALL, 276.8 CU. YDS " \$ 2⁰⁰ = 553.60

TOTAL = \$18062.14

260.40

2521

1465.73

348.00

971.20

542.40

795.90

99.70

53.60

062.14

Section 21

Borrow Pit on L Side of Cut

1083+32 to 1084+62

PAGE	Station	L	C	Flags	Cub. Yds.				
	1083+32	($\frac{+251}{291}$)	($\frac{+164}{268}$)	($\frac{+74}{170}$)	($\frac{+68}{120}$)	($\frac{+116}{104}$)	($\frac{00}{80}$)	137.35	
	= 0								
25	+11	($\frac{+268}{302}$)	($\frac{+223}{276}$)	($\frac{+104}{306}$)	($\frac{+72}{112}$)	($\frac{+128}{112}$)	($\frac{00}{80}$)	124.16	53.2
26	+22	($\frac{+245}{245}$)	($\frac{+107}{195}$)	($\frac{+76}{125}$)	($\frac{+172}{123}$)	($\frac{00}{80}$)		142.20	50.2
27	+35	($\frac{+226}{265}$)	($\frac{+109}{190}$)	($\frac{+74}{130}$)	($\frac{+142}{116}$)	($\frac{00}{80}$)		100.70	58.6
28	+46	($\frac{+252}{183}$)	($\frac{+140}{160}$)	($\frac{+50}{120}$)	($\frac{+156}{119}$)	($\frac{00}{80}$)		67.90	34.3
29	+58	($\frac{+247}{232}$)	($\frac{+117}{190}$)	($\frac{+85}{135}$)	($\frac{+148}{117}$)	($\frac{00}{80}$)		99.76	37.2
30	+68	($\frac{+248}{255}$)	($\frac{+118}{205}$)	($\frac{+76}{125}$)	($\frac{+140}{115}$)	($\frac{00}{80}$)		109.90	38.8
31	+82	($\frac{+289}{320}$)	($\frac{+226}{264}$)	($\frac{+110}{254}$)	($\frac{+97}{140}$)	($\frac{+129}{112}$)	($\frac{00}{80}$)	97.67	46.8
32	+94	($\frac{+255}{264}$)	($\frac{+196}{252}$)	($\frac{+109}{138}$)	($\frac{+140}{115}$)	($\frac{00}{80}$)		86.26	40.9
33	1+03	($\frac{+217}{212}$)	($\frac{+112}{157}$)	($\frac{+150}{118}$)	($\frac{00}{80}$)			67.40	25.6
4	+18	($\frac{+169}{155}$)	($\frac{+128}{135}$)	($\frac{+100}{100}$)	($\frac{+165}{121}$)	($\frac{00}{80}$)		13.75	22.5
4	+30	($\frac{+194}{129}$)				($\frac{00}{80}$)			31
4								00	436.7

Figures in Brackets show original surface

Figures in Brackets show original surface

Waste over Side of Cut
Borrow allowed

822
354.0 @ 4.

Section 22

Cross Sections over borrowed Material in
Fill Sta 1093+50 to 1095+10

Stations	L	C	R	Areas	Cub. Yds.
1093+50	original -30.7 Surface 53.1	-32.4	-34.0 58.0	2026.27	
+75	-298 -235 57.7 36.0	-22.2	-224 -319 37.0 60.9	1140.89	1466.3
1094	-301 -236 52.2 38.0	-22.2	-362 -364 59.0 61.6	1167.92	1068.9
+25	-211 -205 28.7 16.0	-16.7	-364 30.4 61.6	651.94	842.5
+50	-192 -194 37.8 30.0	-143	-156 -298 27.0 50.5	569.06	565.3
+75	-98 21.7	-13.7	-19.4 36.1	498.13	494.1
1095	0.0 8.0	-1.2	-8.0 19.0	44.20	251.1
+10			0.0 8.0	00	5.5
wasted to complete fill					4693.7
Original					8033.9
Borrow in					3340.2

Cross Sections Showing Mat'l wasted from Cut 1095-1096+60

Stations	L	C	R	Area	Cub. Yds.
1095+80	0.0 8.0		0.0 8.0	00	36.9
1096+20	+5.7 9.4	+5.7	+5.7 9.4	99.98	73.7
+40	0.0 8.0		0.0 8.0	0.0	110.6

Section 22

Borrow Pit on L Sta 1095

Stations L C R Areas Cub.Yds.

0+07 0.0 0.0 0.0

+11 $\frac{00}{10} \frac{+20}{64} \frac{00}{10} \frac{00}{20}$ 2220 0.8

+20 $\frac{00}{20} \frac{+30}{10} \frac{+64}{62} \frac{00}{10} \frac{00}{20}$ 156.00 29.9

+30 $\frac{00}{24} \frac{+10}{20} \frac{+50}{10} \frac{+100}{85} \frac{00}{10} \frac{00}{19}$ 236.00 72.6

+40 $\frac{00}{22} \frac{+66}{18} \frac{+105}{10} \frac{+108}{83} \frac{00}{10} \frac{00}{20}$ 325.10 103.9

+50 $\frac{00}{35} \frac{+10}{30} \frac{+21}{23} \frac{+46}{17} \frac{+114}{10} \frac{+116}{110} \frac{00}{10} \frac{00}{17}$ 387.55 131.9

+60 $\frac{00}{36} \frac{+28}{30} \frac{+43}{24} \frac{+93}{18} \frac{+115}{10} \frac{+107}{114} \frac{00}{10} \frac{00}{18}$ 421.50 150.0

+70 $\frac{00}{40} \frac{+36}{30} \frac{+20}{24} \frac{+85}{18} \frac{+109}{10} \frac{+90}{103} \frac{00}{10} \frac{00}{17}$ 377.90 148.0

+80 $\frac{00}{24} \frac{+21}{18} \frac{+50}{10} \frac{+98}{94} \frac{00}{10} \frac{00}{145}$ 286.75 123.1

+90 $\frac{00}{34} \frac{+15}{30} \frac{+25}{24} \frac{+60}{19} \frac{+70}{10} \frac{+62}{5} \frac{+84}{82} \frac{00}{6} \frac{00}{115}$ 236.65 96.9

1 $\frac{00}{24} \frac{+62}{19} \frac{+63}{10} \frac{+58}{5} \frac{+58}{62} \frac{00}{8} \frac{00}{10}$ 196.80 80.3

+10 $\frac{00}{24} \frac{+50}{20} \frac{+55}{10} \frac{+61}{56} \frac{00}{8} \frac{00}{115}$ 175.48 68.9

+20 $\frac{00}{22} \frac{+17}{20} \frac{+30}{10} \frac{+41}{41} \frac{+51}{9} \frac{00}{12}$ 109.75 52.8

+30 $\frac{00}{21} \frac{+16}{19} \frac{+22}{10} \frac{+47}{26} \frac{00}{10} \frac{00}{14}$ 88.60 36.7

+40 $\frac{00}{20} \frac{+18}{18} \frac{+14}{10} \frac{+42}{12} \frac{00}{10} \frac{00}{15}$ 65.10 28.6

+50 $\frac{00}{00} \frac{+24}{12} \frac{00}{16}$ 19.20 15.6

+80 $\frac{00}{00} \frac{00}{10}$ 00 10.7

1150.6

→ see P. 45
Deduct waste from Cut 1096+70 and allow Haul on same

Borrow

110.6

1040.0 Cub.Yds

Section 22

46

Cross Sections over borrowed Material in Fill-1096+45-1099+30

Stations	L	C	R	Areas	Cub. Yds.
1097+25	original -16.5 Surface 3.8	-22.7	-33.0 56.5	1175.45	426.1
+35	-20.5 -24.0 37.8 17.0	-21.7	-25.0 -32.5 41.0 55.8	1125.40	639.5
+50	-26.4 -27.8 46.6 36.0	-20.7	-24.2 -30.6 42.0 52.9	1176.83	481.0
+68	-33.0 -27.1 56.5 31.0	-20.9	-20.8 -24.4 -32.2 30.0 40.0 55.3	1166.19	1011.7
+90	-33.0 -25.4 57.0 30.0	-23.1	-21.4 -27.8 -34.8 20.0 40.0 59.2	1317.13	
orig. surf. +90	33.3 57.0	-36.1	-39.3 -38.2 52.0 64.3	2488.00	
	wanted to Complete Fill				2858.3
	Original				4852.4
	Borrowed				1994.1 cu.

Cross Sections over well hauled in from
cuts for borrow Sta 1107+10 to 1113+55

Sta	L	C	R	Areas	Cub. Yds.
1110+40	0.0 7.0		0.0 7.0	0.0	56.9
+55	-3.8 12.7	-7.0	-14.0 28.0	204.75	72.8
+65	-3.5 12.3	-6.5	-13.5 27.3	188.20	28.8
+70	-1.7 9.6	-4.6	-7.3 -14.0 12.0 28.0	122.83	320.5
1111+20	-4.8 14.2	-5.2	-6.2 -12.0 -18.4 5.0 14.0 30.6	223.32	164.6
+40	-4.5 13.8	-6.3	-17.0 32.5	221.10	102.4
+65	0.0 7.0		0.0 7.0	0.0	746.0
	Borrow wanted to complete fill				

Section 22

Borrow Pit on L Sta 1119

Sta	L	C	Areas	Cub. Yds.
0	0.0	0.0	0.0	
+20	$\frac{00}{350} + \frac{65+65}{290} + \frac{24.0}{24.0}$	0.0	130.00	48.1
+40	$\frac{00}{430} + \frac{40}{410} + \frac{8.6}{290} + \frac{25}{50}$	0.0	219.05	129.3
+60	$\frac{00}{310} + \frac{80}{230} + \frac{30}{50}$	0.0	138.50	132.4
+85	0.0	0.0	0.0	<u>64.1</u> 373.9

Borrow Pit on L Sta 1123.

Sta	L	C	R
0+22		0.0	$\frac{00}{80}$
+30	$\frac{00}{95}$	$\frac{00}{10} + \frac{22}{04} + \frac{40}{10} + \frac{30}{20} + \frac{19}{30} + \frac{28}{40} + \frac{33}{50} + \frac{32}{60} + \frac{19}{70} + \frac{14}{80} + \frac{00}{100}$	
+40	$\frac{00}{95} + \frac{34}{70} + \frac{14}{50} + \frac{12}{30} + \frac{20}{10}$	$\frac{1}{25} + \frac{53}{10} + \frac{65}{20} + \frac{66}{30} + \frac{61}{40} + \frac{59}{50} + \frac{59}{60} + \frac{57}{70} + \frac{51}{80} + \frac{31}{90} + \frac{00}{100}$	
+50	$\frac{00}{95} + \frac{35}{70} + \frac{19}{50} + \frac{28}{30} + \frac{29}{10}$	$\frac{1}{52} + \frac{66}{10} + \frac{81}{20} + \frac{82}{30} + \frac{63}{40} + \frac{68}{50} + \frac{56}{60} + \frac{44}{70} + \frac{46}{80} + \frac{30}{90} + \frac{00}{100}$	
+60	$\frac{00}{95} + \frac{36}{70} + \frac{29}{50} + \frac{29}{30} + \frac{27}{10}$	$\frac{1}{51} + \frac{66}{10} + \frac{70}{20} + \frac{62}{30} + \frac{54}{40} + \frac{38}{50} + \frac{22}{60} + \frac{31}{70} + \frac{30}{80} + \frac{00}{90}$	
+70	$\frac{00}{95} + \frac{32}{70} + \frac{28}{50} + \frac{28}{30} + \frac{19}{10}$	$\frac{1}{46} + \frac{43}{10} + \frac{37}{20} + \frac{30}{30} + \frac{24}{40} + \frac{27}{50} + \frac{22}{60} + \frac{26}{70} + \frac{12}{80} + \frac{00}{88}$	
+80	$\frac{00}{95} + \frac{33}{70} + \frac{19}{50} + \frac{29}{30} + \frac{19}{10}$	$\frac{1}{33} + \frac{37}{10} + \frac{31}{20} + \frac{27}{30} + \frac{38}{40} + \frac{29}{50} + \frac{28}{60} + \frac{00}{75}$	
+90	$\frac{00}{95} + \frac{36}{70} + \frac{31}{50} + \frac{31}{30} + \frac{36}{10}$	$\frac{1}{36} + \frac{29}{10} + \frac{28}{20} + \frac{26}{30} + \frac{22}{40} + \frac{10}{50} + \frac{00}{60}$	
1	$\frac{00}{95} + \frac{33}{70} + \frac{25}{50} + \frac{31}{30} + \frac{31}{10}$	$\frac{1}{35} + \frac{31}{10} + \frac{20}{20} + \frac{06}{30} + \frac{00}{40}$	
+10	$\frac{00}{95} + \frac{16}{70} + \frac{29}{50} + \frac{20}{30} + \frac{19}{10}$	$\frac{1}{15} + \frac{10}{10} + \frac{00}{15}$	
+17	$\frac{00}{95}$	$\frac{00}{30}$	

Se

Yds.

48.1

29.3

32.4

64.1

73.9

$$\begin{array}{r} +1.9 + \frac{14}{80} \frac{00}{100} \\ 80 \end{array}$$

$$\begin{array}{r} 31 \frac{00}{90} \frac{00}{100} \\ 90 \end{array}$$

$$\begin{array}{r} +30 \frac{00}{86} \frac{00}{100} \\ 86 \end{array}$$

$$\begin{array}{r} 30 \frac{00}{80} \frac{00}{90} \\ 80 \end{array}$$

$$\begin{array}{r} -2 \frac{00}{80} \frac{00}{88} \\ 80 \end{array}$$

Areas Cub. Yds.

0.0

35.7

241.00

171.6

685.50

274.5

797.05

270.1

661.50

212.7

487.30

168.9

425.00

154.6

410.00

136.1

324.75

94.4

185.00

24.0

0.0

1544.6

Seduct waste from Cut

Sta 126 + 3076 / 1132 + 28 =

Borrow allround

1054.6 see next page

488.0 Cub. Yds

Section 22

Cross Sections of Material Wasted from Cut

Sta 1126+30 to 1132+28

Stations	L	C	R	Areas	Cub Yds.
1129+30	+16.8 12.2	+16.8	+16.8 12.2	339.36	
+40	+14.8 11.7	+14.8	+14.8 11.7	291.56	116.8
+80	+9.0 10.2	+9.0	+9.0 10.3	164.25	337.6
1130	+8.0 10.0	+8.0	+8.0 10.0	144.00	114.2
+10	+7.4 9.9	+7.4	+7.4 9.8	132.09	51.1
+50	+5.8 9.4	+5.8	+5.8 9.5	101.21	172.8
1131	+4.0 9.0	+4.0	+4.0 9.0	68.00	156.7
+50	+1.4 8.3	+1.4	+1.4 8.4	22.89	84.2
1132	0.0 8.0	0.0	0.0 8.0	00	21.2
					1054.6

Followed Haul on same into fill and deduct from
Borrow Pit.

Measurements for Classification Cut 1126+30 to 1132+28

Station	Depth of Loose Rock on Top	Areas	Cub. Yds.
1128	0.0	0.0	
1129	4.2	148.80	275.6
+50	6.0	198.80	321.9
1130	7.0	214.20	382.5
+50	7.0	198.80	382.5
1131	5.0	125.00	299.9
+50	0.0	0.0	116.0
			1778.4

11.2		Haul 530 Yds. 215		
54.6	1134	$\frac{20}{36.0}$		0.0
from	+20	$\frac{38}{33.6} \left(\frac{0.0}{30.0} \right)$	$\frac{20}{8.0} 0.0$	10.3
	+65	$\frac{63}{34.0} \left(\frac{0.0}{28.0} \right)$	$\frac{31}{8.8} \frac{0.0}{8.0} 0.0$	39.6
	1135+30	$\frac{8.0}{35.0} \left(\frac{0.0}{30.0} \right)$	$\frac{5.1}{9.3} \frac{2.0}{8.0} 0.0$	100.78
	1136	$\frac{5.4}{34.3} \left(\frac{0.0}{29.0} \right)$	$\frac{3.6}{8.9} \frac{0.0}{8.0} 0.0$	303.9
ON	+70	$\frac{1.30}{30.5} \left(\frac{0.0}{27.0} \right)$	$\frac{1.4}{8.4} \frac{2.0}{8.0} 0.0$	151.66
	1137	$\frac{1.4}{29.0} \left(\frac{0.0}{27.0} \right)$	$\frac{2.0}{8.0} 0.0$	328.3
↓	+40	$\frac{2.0}{3.0}$		101.61
				188.3
				43.65
				31.6
				13.30
				6.6
				908.6

Haul 850 Yds. 140

Haul 850 Yds. 140'

Section 22

Borrow Pit on L Sta 1134+ Matl used in

Stations	L	C	R
0+30	00 60	00	0 10
+35	00 +05 +17 +20 +17 +18 +17 70 60 50 40 30 20 10	+ 21 +17 +21 +23 +27 +28 +29 20 10 20 30 40 50 60 70	+ 26 80
+45	00 +13 +21 +29 +32 +20 +33 +20 80 70 60 50 40 30 20 10	+ 27 +30 +25 +37 +38 +41 +43 +44 30 10 20 30 40 50 60 70 80	+10 90
+55	00 +04 +11 +19 +35 +46 +44 +43 +42 90 80 70 60 50 40 30 20 10	+ 34 +38 +37 +37 +29 +39 +44 +39 39 10 20 30 40 50 60 70 80	+22 90
+65	00 +03 +15 +28 +39 +46 +42 +38 80 70 60 50 40 30 20 10	+ 42 +40 +32 +39 +51 +48 +44 36 10 20 30 40 50 60 70	+41 80
+75	00 +08 +22 +35 +46 +48 +44 70 60 50 40 30 20 10	+ 47 +47 +45 +51 +56 +56 +53 +57 47 10 20 30 40 50 60 70	+38 80
+85	00 +05 +13 +18 +27 +25 +22 70 60 50 40 30 20 10	+ 29 +32 +34 +33 +24 +23 +27 28 10 20 30 40 50 60 70	+30 80
+95	00 70	00	

in Repairing Washout Stations 1132+15 to 1134+65

R	Areas	Cub. Yds.
$\frac{0.0}{100}$	0.0	
$\begin{array}{r} +2.7 +2.8 +3.9 \\ 50 \quad 60 \quad 70 \end{array}$		30.0
$\begin{array}{r} +2.6 +0.8 \quad 0.0 \\ 80 \quad 90 \quad 100 \end{array}$	324.00	
$\begin{array}{r} +4.1 +4.3 +4.2 \\ 60 \quad 70 \quad 80 \end{array}$		152.8
$\begin{array}{r} +1.0 \quad 0.0 \\ 90 \quad 100 \end{array}$	501.00	
$\begin{array}{r} +3.9 +4.4 +3.9 \\ 60 \quad 70 \quad 80 \end{array}$		204.3
$\begin{array}{r} +2.2 \quad 0.0 \\ 90 \quad 100 \end{array}$	602.00	
$\begin{array}{r} +4.8 +4.2 \\ 60 \quad 70 \end{array}$		223.1
$\begin{array}{r} +4.1 +2.4 \quad 0.0 \\ 80 \quad 90 \quad 100 \end{array}$	606.00	
$\begin{array}{r} +4.6 +5.3 +5.7 \\ 50 \quad 60 \quad 70 \end{array}$		233.5
$\begin{array}{r} +3.8 +0.8 \quad 0.0 \\ 80 \quad 90 \quad 100 \end{array}$	655.00	
$\begin{array}{r} +2.4 +2.3 +2.7 \\ 50 \quad 60 \quad 70 \end{array}$		191.3
$\begin{array}{r} +3.0 +0.8 \quad 0.0 \\ 80 \quad 90 \quad 100 \end{array}$	378.00	
$\frac{0.0}{100}$	0.0	70.0
		1105.0

800 yds Hauled 160'

Section 22

L C R

Station Grade

1083 4163.49

$\frac{+16.0}{12.0}$ +8.7 $\frac{+3.5}{8.9}$

+20

$\frac{+12.0}{11.0}$ +5.2 $\frac{0.0}{8.0}$

+25

+2.94

$\frac{+11.4}{10.8}$ +4.1 $\frac{0.0}{6.5}$ -1.5
9.3

+30

$\frac{+11.2}{10.8}$ +5.4 $\frac{0.0}{8.0}$

1083+43.9 4164.78

+50

$\frac{+18.4}{12.6}$ +10.0 $\frac{+3.9}{9.0}$

+65

$\frac{+13.8}{11.5}$ +5.5 $\frac{+1.0}{8.3}$

1083+75

$\frac{+15.8}{12.0}$ +9.0 $\frac{+2.5}{8.6}$

1084+15

$\frac{+13.0}{11.3}$ +5.3 $\frac{0.0}{8.0}$

+50

$\frac{+16.5}{12.1}$ +7.3 $\frac{+1.7}{8.4}$

1084+51.9 4168.26

1084+80 4169.24

$\frac{+19.4}{12.9}$ +12.6 $\frac{+6.4}{9.6}$

3.22

Areas Cub. yds
Cut Fill Exc Emb

168.92 ✓

98.6

97.40

0.0

16.5

0.1

81.07

.37

16.3

0.1

95.16

0.0

0.2 ✓

108.3 Sta 1083 to 1087 + 30 Exc 1702.4 ✓

197.20

1083 to 1084 + 50

class Lo. R. 75% 554.7 C.Y.

S.R. 25% 184.9 ✓

86.3

1084 + 50 to 1086 + 50

Class 1/2 Lo R. 379.2 ✓

1/2 S.R. 379.1 ✓

113.65

1086 + 50 to 1087 + 30 S.R. 204.5 ✓

51.8 Total Loose Rock 933.9 ✓

165.90

" Solid " 768.5 ✓

199.3

Haul 97.9 So far

" 132.5 opposite "

" 156.7 " "

" 153.8 into extra width bank free ✓

103.15

162.5 " 1000. from 1084 + 50 to 1081 + 85 = 2300.

140. " 1086 + 20 " 87255 = 190 ✓

147.63

Total Haul 2490. ✓

218.1

244.95

292.4

1250.1

✓

✓

Station Grade

L

C

R

1085+25 4170.81

$\frac{+13.4}{11.4}$

+5.4

$\frac{0.0}{8.0}$

+75

$\frac{+6.9}{9.7}$

00

$\frac{-16.2}{31.3}$

1086

$\frac{+6.1}{9.5}$

00

$\frac{-20.6}{37.9}$

+65

$\frac{+9.4}{10.4}$

+5.0

$\frac{0.0}{8.0}$

+80

4330

$\frac{+9.9}{10.5}$

+5.7

$\frac{+3.2}{8.8}$

1087

$\frac{+7.1}{9.8}$

+4.4

$\frac{+1.5}{8.4}$

+15

$\frac{+2.9}{8.7}$

+1.7

$\frac{0.0}{8.0}$

+30

$\frac{0.0}{8.0}$

-2.5

$\frac{-9.2}{20.8}$

+50

$\frac{-7.0}{17.5}$

-9.8

$\frac{-19.4}{36.1}$

1087+75 4179.56

$\frac{-13.9}{27.9}$

-19.0

$\frac{-24.3}{43.5}$

Areas Cub Yds

Cut Fill Exc Emb

105.98 0.0 1250.1 Sta 1085+25 to 1086+65

123.7 35.0 Emb at 152.4 Made
from Cut opposite

27.60 56.70

24.1 59.6

24.40 72.10

130.0 57.8

83.60 0.0

152.4

53.1

107.41

67.3

74.44

27.8

25.80 0.0

4.8

12.6

Sta 1087+15 to 1088+35

0.0

68.20

1680.921.555.1086+506
87+30

Emb at 1670.1 Cully.

1702.4

156.8 Made from cuts at

355.04

Ends

540.3

812.00

440.6

1750.3

✓

Station Grade

L C R

1087+90 4180.09

$\begin{array}{r} -13.4 \\ 21.7 \end{array}$ -19.6 $\begin{array}{r} -21.6 \\ 39.4 \end{array}$

1088

$\begin{array}{r} -13.1 \\ 27.6 \end{array}$ -16.4 $\begin{array}{r} -18.2 \\ 34.3 \end{array}$

+35

$\begin{array}{r} 0.0 \\ 8.0 \end{array}$ 00 $\begin{array}{r} 0.0 \\ 8.0 \end{array}$

+60

$\begin{array}{r} +9.8 \\ 10.5 \end{array}$ +9.9 $\begin{array}{r} +9.5 \\ 10.4 \end{array}$

+80

$\begin{array}{r} +18.5 \\ 12.6 \end{array}$ $\begin{array}{r} +18.1 \\ 8.0 \end{array}$ +16.3 $\begin{array}{r} +13.0 \\ 11.3 \end{array}$

+3.50

1089

$\begin{array}{r} +23.1 \\ 13.9 \end{array}$ +19.4 $\begin{array}{r} +15.6 \\ 11.9 \end{array}$

+50

$\begin{array}{r} +34.8 \\ 16.7 \end{array}$ +27.9 $\begin{array}{r} +22.8 \\ 13.7 \end{array}$

1089+85

$\begin{array}{r} +40.8 \\ 18.2 \end{array}$ +32.9 $\begin{array}{r} +26.2 \\ 14.6 \end{array}$

1090+20

$\begin{array}{r} +42.5 \\ 18.6 \end{array}$ +33.4 $\begin{array}{r} +26.0 \\ 14.5 \end{array}$

1090+46 4189.05

$\begin{array}{r} +38.8 \\ 17.7 \end{array}$ +30.2 $\begin{array}{r} +23.3 \\ 13.8 \end{array}$

Areas Cub Yds

Cut Fill Exc Emb
1150.3

774.20

256.3

609.75

263.5

1670.1

00

00

55.8 Sta 1088+35 to 1091+25

180.65

Exc. 5345.8 Cub. yds.

186.6 class matl. from 1089+50 to 91+25

323.33

above lower slope stakes

15% Lo Rock = 820.04.

270.6 Balance of cut

Solid Rock = 4525.8 "

407.46

983.3

Haul 45.6 to free

" 3535.2 "

654.48

" 730. from 1089+15 to 1087+75 = 1010

" 718. " 1089+50 to 1080+60 = 6390

" 2950. " 1090+10 to 1092+45 = 6930

947.6

Total Haul

14340.

807.56

1059.3

826.77

746.7

724.05

735.1

4985.0

✓

Station Grade

L

C

R

1090+85 $\overset{310200}{4190.89}$

$\frac{+191}{128}$

+14.7

$\frac{+11.0}{108}$

1091+15

$\overset{310200}{+3.17}$

$\frac{+50}{93}$

+26

$\frac{00}{80}$

+25

$\frac{00}{80}$

-11

$\frac{-4.7}{14.0}$

1091+36 $\overset{4191.90}{0}$

+45

$\frac{-5.2}{14.8}$

-8.3

$\frac{-13.9}{21.9}$

+60

$\frac{-5.2}{14.8}$

-8.2

$\frac{-12.1}{25.2}$

1092

$\frac{-9.8}{21.7}$

-13.2

$\frac{-17.9}{33.9}$

+25

$\overset{309+80}{+2.86}$

$\frac{-14.1}{28.2}$

-17.1

$\frac{-22.0}{40.0}$

+50

$\frac{-17.9}{33.9}$

-20.8

$\frac{-28.1}{49.2}$

H.B
1092+66

$\frac{-20.9-22.6}{38.4 \quad 7.0}$

-23.0

$\frac{-23.9-29.8}{7.0 \quad 51.7}$

Toe
1093+09

-28.6

Areas Cub Yds.

Cut Fill Exc. Emb
 498.50

293.86

186.9

42.49 00

52 3.5

5177.1

00 28.55 168.756

5345.8

101.0

244.05

130.1 Sta 1091 + 156/1093 + 09

224.55

Emb'd 3799.0 @ 4.

510.0 made from Cut

463.91

So.

543.2

709.46

803.1

1025.24

663.1

1212.74

1045.0

3799.0

1045.0

R

332

$\frac{30.1}{52.2} \frac{332}{70} 33.7$
 $\frac{340}{70} \frac{36.4}{61.6}$

 $282 +$
$$\begin{array}{r} -22.1 \\ +0.2 \\ \hline \end{array}$$

-27.9

$$\begin{array}{r} -328 \\ 562 \\ \hline \end{array}$$
$$\begin{array}{r} -17.2 \\ \hline 378 \end{array}$$

-241

$$\begin{array}{r} -29.0 \\ \hline 50.5 \end{array}$$
$$\begin{array}{r} -8.3 \\ 19.5 \end{array}$$

-13.7

$$\begin{array}{r} -19.4 \\ 36.1 \end{array}$$
$$\begin{array}{r} 0.0 \\ \hline 8.0 \end{array}$$

-1.2

$$\begin{array}{r} - 8.0 \\ \hline 19.0 \end{array}$$
$$\begin{array}{r} + 8.0 \\ \hline 10.0 \end{array}$$

+3.8

$$\begin{array}{r} 0.0 \\ \hline 8.0 \end{array}$$

Areas Cub. Yds
Cut Fill Exc. Emb

Sta 1093+5 to 1095+10

2063.3 Emb't 6075.2 Cub Yds

2150.28

1695.0 made from Cut

2253.2 1040.0 made from
measured Pit 11095

1536.93

Class 25%a = 260.0

10% Lo R = 780.0

750.7 Balance 3340.2

less 5% 167.0

1165.46

Quarry meas. 3173.2

in Fill Class

760.8 $\frac{2}{3}$ Earth = 2115.5

$\frac{1}{3}$ Lo R = 1057.7

477.81

Total Earth = 2375.5

241.7 "Lo Rock = 1837.7

0.0 44.20

Haul 520 yds from lower Pit
240 = 1250

8.2 5.5 "820 yds from upper Pit

66.20 00

6075.2 150' = 1230

74.3

Total Haul 2480

82.5

✓ 441

Station Grade

L C R

1095+25 ~~420302~~
28305.90

+15.9
12.0 +10.0 +17.2
98

+50 27

+300
15.5 +25.2 +19.6
12.9

+75 10

+33.2
16.3 +26.8 +21.1
13.3

1096

+27.6
14.9 +22.4 +17.2
12.3

+25

+11.5
11.9 +11.7 +8.4
10.1

+45

+5.8
9.5 +3.7 0.0
8.0

+60

0.0
8.0 -3.0 -10.1
22.2

+75

-5.2
14.8 -9.3 -19.0
35.6

1097

-10.1
22.2 -16.9 -29.6
51.4

1097+25 ~~4208.75~~

-16.5
31.8 -22.7 -33.0
56.5

Areas Cub. Yds

Cut Fill Exc. Emb

82.5

201.40

350.8 Sta 1095 to 1096 + 60 Ex. 1968.8 cu.

Class Top 4' Lo. R. = 488.8 cu.

Balance Solid Rock = 1480.0 "

556.24

541.7 Haul 560. Soften

" 505. W. "

613.84

" 660 from 1095 + 70 to 1094 + 50 = 790

" 200 " 1095 + 95 to 1097 = 210

508.2

Total Haul = 1000

483.84

327.8

224.30

103.7

55.58 00

10.3 14.9

00

80.65

1925.0

4380 " 50.

1968.8

110.9

318.59

499.7

760.87

896.4

1175.45

1360.6

2882.5

Station Grade

1097+50 4209.47

L	C	R
-26.4		-35.4
46.6	-29.0	60.1

+68

-34.2		-38.0
58.3	-37.6	64.0

1098

-32.9		-40.0	-38.3
56.4	-35.4	46.0	64.5

+25

-28.0		-33.6	-42.0
49.0	-31.9	34.0	70.0

+50

28.2

-21.2		-21.0	-27.5
38.8	-26.4	27.0	48.3

+75

-16.2		-12.0
31.3	-19.1	25.0

1099

-10.7		-5.3
23.1	-9.9	15.0

+19

-5.0		0.0
14.5	-2.5	8.0

+30

0.0		+5.4
8.0	+2.2	9.4

1099+50 4215.19

6.4

+8.7		+14.0
10.2	+10.4	11.5

20

Areas Cub. Yds

Cut Fill Exc Emb

2882.5

1763.45

Sta 1096 + 456 / 099 + 30

1438.5 Emb at 12220.2 Cy.

2551.94

10226.1 yds made

2976.4 from cuts at ends

2470.78

Balance 1994.1 Cy.

less 5% 99.7

2084.1 Borrowed 1894.4 Cy.

class 2/3 Earth = 1262.9 Cy.

2030.85

" 1/3 Lo. R. = 631.5

1484.1

Haul on L460 hauls 1200 = 920

1170.90

" on R200 yds hauls 175 = 350

Total Haul = 1270.

838.5

See P. 46

636.36

407.8

244.59

102.1

00

4562

5.5

6.2

40.74

00

12220.2

90.5

203.64

312.2

408.2

✓ 444

Sta Station Grade

L

C

R

109 1099 +75 4215.91
301+40 $\begin{array}{r} +21.1 \\ 13.3 \end{array}$

+21.1

 $\begin{array}{r} +24.3 \\ 14.1 \end{array}$

1100

 $\begin{array}{r} +34.8 \\ 16.7 \end{array}$

+35.8

 $\begin{array}{r} +37.9 \\ 17.5 \end{array}$

109 +25

 $\begin{array}{r} +48.8 \\ 20.2 \end{array}$

+49.0

 $\begin{array}{r} +49.7 \\ 20.4 \end{array}$

+50

 $\begin{array}{r} +64.0 \\ 24.0 \end{array}$

+61.1

 $\begin{array}{r} +57.4 \\ 22.4 \end{array}$

+65

 $\begin{array}{r} +67.6 \\ 24.9 \end{array}$

+63.4

 $\begin{array}{r} +59.3 \\ 22.9 \end{array}$

+75

 $\begin{array}{r} +66.5 \\ 24.6 \end{array}$

+62.5

 $\begin{array}{r} +58.4 \\ 22.6 \end{array}$

10 1101

 $\begin{array}{r} +59.0 \\ 22.8 \end{array}$

+56.4

 $\begin{array}{r} +51.8 \\ 21.0 \end{array}$

+25

 $\begin{array}{r} +48.5 \\ 20.1 \end{array}$

+45.8

 $\begin{array}{r} +39.9 \\ 18.0 \end{array}$

+50

 $\begin{array}{r} +34.9 \\ 16.7 \end{array}$

+32.6

 $\begin{array}{r} +30.0 \\ 18.5 \end{array}$ 109 1101 +75 4221.63
301+40 $\begin{array}{r} +21.4 \\ 13.4 \end{array}$

+18.9

 $\begin{array}{r} +14.7 \\ 11.7 \end{array}$

Areas Cub yds

Cut Fill Exc Emb

408.2

470.67

Sta 1099 + 19 to 1102 + 10

632.0 Exc. 10279.3 Cub yds

894.43

class 30% L.R. = 3083.8 cu.

1057.0 " 70% Solid Rock = 7195.5 "

1388.70

1524.0 Haul 409.0 So far

" 666.7 " "

1903.12

" 736.0 of run 1100 + 60 to 1098 = 19136

" 176.0 " 110430 to 1102 + 7 = 2554

1090.6

Total Haul = 21690

2022.86

740.3

1974.60

1691.2

1678.36

1344.7

1226.09

930.8

784.46

539.8

381.60

2346

10193.2

444

Station	Grade	L	C	R
109	1102+05 4222.49	$\begin{array}{r} +4.4 \\ 9.1 \end{array}$	+2.7	$\begin{array}{r} 00 \\ 8.0 \end{array}$

+10	$\begin{array}{r} 00 \\ 8.0 \end{array}$	00	$\begin{array}{r} -3.2 \\ 11.8 \end{array}$
-----	--	----	---

10	+25	$\begin{array}{r} -6.6 \\ 16.9 \end{array}$	-6.4	$\begin{array}{r} -15.5 \\ 30.3 \end{array}$
----	-----	---	------	--

+50	$\begin{array}{r} -25.5 \\ 45.3 \end{array}$	-18.5	$\begin{array}{r} -17.4 \\ 7.0 \end{array}$	$\begin{array}{r} -24.1 \\ 43.2 \end{array}$
-----	--	-------	---	--

+75	$\begin{array}{r} -21.6 \\ 39.4 \end{array}$	$\begin{array}{r} -31.0 \\ 10.0 \end{array}$	-31.5	$\begin{array}{r} -35.8 \\ 60.7 \end{array}$
-----	--	--	-------	--

1102+95	$\begin{array}{r} -11.8 \\ 24.7 \end{array}$	-20.0	$\begin{array}{r} -21.7 \\ 28.0 \end{array}$	$\begin{array}{r} -33.6 \\ 57.4 \end{array}$
---------	--	-------	--	--

10	1103+25	$\begin{array}{r} -6.8 \\ 17.2 \end{array}$	-12.8	$\begin{array}{r} -28.3 \\ 49.5 \end{array}$
----	---------	---	-------	--

+50	$\begin{array}{r} -3.9 \\ 12.9 \end{array}$	-8.5	$\begin{array}{r} -16.3 \\ 24.5 \end{array}$
-----	---	------	--

+80	$\begin{array}{r} 00 \\ 8.0 \end{array}$	-2.0	$\begin{array}{r} -10.1 \\ 22.2 \end{array}$
-----	--	------	--

1103+985 4228.01

10	1104	$\begin{array}{r} +3.7 \\ 8.9 \end{array}$	+0.3	$\begin{array}{r} 00 \\ 10 \end{array}$	$\begin{array}{r} -3.7 \\ 12.6 \end{array}$
----	------	--	------	---	---

Areas Cub Yds

Cut Fill Exc Emb

40.69 00

10193.2

2.5 0.7

00

11.20

10195.7

83.6 1/2 54

Sta 1102+05 to 1104+50

10279.3

66.3

Emb'd 4209.0 @ 1/4

228.39

Made from cuts
at ends.

545.0

948.87

1280.5

1817.12

983.5

838.29

771.1

549.73

360.8

229.65

164.0

00

65.55

4.0

28.4

16.29

11.10

16.2

6.4

20.2 4206.7

✓ 10/11

Station	Grade	L	C	R
10	1104+20 4228.69	+5.1 9.3	+1.1 3.5	3.5 12.3

	1104+50 3.17	+8.3 10.1	+3.8	0.0 8.0
--	--------------	--------------	------	------------

1104+88.5 4230.86

1	1105 2.96+15	+8.1 10.0	+5.0	+1.7 8.4
---	--------------	--------------	------	-------------

1105+04 3.16 4231.35

	+30	+11.9 11.0	+7.8	+4.1 9.0
--	-----	---------------	------	-------------

	+55 2.82	+10.1 10.6	+3.8	+0.4 8.1
--	----------	---------------	------	-------------

	1105+75	+11.2 10.8	+7.8	+4.7 9.2
--	---------	---------------	------	-------------

1105+94 4233.89

	1106+10	+7.4 9.9	+10.9	+15.2 11.8
--	---------	-------------	-------	---------------

	+50	+4.6 9.2	+8.5	+13.2 11.3
--	-----	-------------	------	---------------

	1106+85 2.52	+11.0 10.8	+7.6	+3.0 8.8
--	--------------	---------------	------	-------------

1	1107+10 4236.81	+7.4 9.9	+3.4	0.0 8.0
---	-----------------	-------------	------	------------

Areas Cubyds.

Cut	Fill	Exc	Emb
27.43	6.13	20.2	4206.7
		52.8	2.3
67.59	00		4209.0
		141.5	
85.20			Sta 1103+80 to 1109+80
		126.2	Exc. 1760.0 Cubyds.
			class Solid Rock.
142.00			
		101.6	Haul 102.0 So free
			" 160.0 N "
77.53			" 950. from 1105+80 to 1103+20 = 2470
			" 300. + 1106+85 to 1110+25 = 1020
			Total Haul = 3490.
		81.2	
141.60			
		227.0	
208.67			
		271.8	
158.32			
		187.2	
130.48			
		88.2	
60.03	00	25.1	1.4
		1322.8	1.4

✓ 9/11

Station	Grade	L	C	R
1107	+254237.18	$\frac{+57}{94}$	+1.2 30	$\frac{00}{129} -39$

+50	$\frac{+70}{98}$	+2.5 60	$\frac{00}{112} -28$
-----	------------------	---------	----------------------

1108	$\frac{+45}{91}$	+0.6 10	$\frac{00}{115} -3.0$
------	------------------	---------	-----------------------

+25	$\frac{+43}{91}$	+0.9 30	$\frac{00}{132} -4.1$
-----	------------------	---------	-----------------------

+64	$\frac{+31}{88}$	00	$\frac{00}{139} -4.6$
-----	------------------	----	-----------------------

1109	$\frac{+35}{89}$	+0.6 20	$\frac{00}{117} -3.1$
------	------------------	---------	-----------------------

+40	$\frac{+23}{86}$	00	$\frac{00}{127} -3.8$
-----	------------------	----	-----------------------

1109	+544243.23		
------	------------	--	--

+80	$\frac{0.0}{80}$	-2.9	$\frac{-10.3}{22.5}$
-----	------------------	------	----------------------

1110	$\frac{-13}{90}$	-3.5	$\frac{-11.4}{24.1}$
------	------------------	------	----------------------

1110	+304245.63	$\frac{-42}{133}$	$\frac{16.0}{31.0} -8.0$
------	------------	-------------------	--------------------------

Areas Cub yds.

Cut Fill Exc Emb
 1322.8 1.4

30.24 7.80

36.1 4.3 Sta 1107+10 to 1113+55

47.75 1.40

Emb 2099.8 Cub yds

63.7 9.6 13538 Made from
 Cuts

21.03 9.00

balance 746.0

less 5% 37.3

20.2 8.0 Borrow 708.7 cu.

Class 1/2 Earth 354.3 cu.

22.65 8.20

1/2 Loose R. 354.4 cu

25.3 17.5 See p. 46.

12.40 16.10

19.8 15.9

17.28 7.75

19.6 15.6

9.20 13.30

4.5 69.3

00 80.27

1512.0

248.02 0750

1760.0

67.6

102.37

194.6

247.90

282.7

686.5

✓ 404

Station Grade

L

C

R

1110+65 4246.74

-3.5
12.3

-6.5

-13.5
27.3

1111+20

-4.8
14.2

-9.1

-18.4
34.6

+60

+3.16

-4.1
13.2

-7.5

-15.8
30.7

1112

-1.7
9.6

-4.0

-13.7
27.6

1112+75

0.0
8.0

-1.3

-4.7
14.1

1113+15 4254.64

+4.5
9.1

+1.4

0.0
5.0
8.8

1113+55

+2.82

+4.5
9.1

+2.0

0.0
6.0
8.7

1113+85

+2.1
8.5

0.0

-1.7

-11.7
24.6

1114+05 4257.18

1114+35

+2.52

+3.0
8.8

0.0

-4.8
14.2

1114+65 4258.70

+5.1
9.3

+1.8

0.0
5.0
9.3

Areas Cub Yds

Cut Fill Exc Emb

686.5

18820

500.5

30324

398.2

23427

268.6

12830

221.0

00

30.81

138 23.7

27.87 1.20

45.2 1.3

33.10 0.55

2099.8

21.3 36.1 Sta 113+55 to 115+90

5.25 64.41

Embank 195.1 cu.

16.0 75.2 made from cut N.

12.00 16.80

25.1 10.2

33.26 1.50

22.0 2.8

143.4 124.3

1994

Station Grade

L C R

1114+85 4259.20

+4.7
9.2 +1.2 $\frac{0.0}{3.0}$ -3.0
11.5

1115+05

+5.6
9.4 +2.5 $\frac{0.0}{6.0}$ -0.8
8.2

+50

+0.8 $\frac{0.0}{8.2}$ $\frac{0.0}{6.5}$ -2.5 -6.4
16.6

1115+71.2 4261.37

1115+90

+8.2
10.1 +3.5 $\frac{0.0}{8.0}$

1116+25

+12.1
11.0 +9.4 +7.6
9.9

1116+61.2 4263.91

1116+70

+10.4
10.6 +6.9 +4.2
9.1

1117+15

+9.8
10.5 +7.4 +5.7
9.4

+60

+2.6
8.7 +1.2 $\frac{0.0}{8.0}$

+80

$\frac{0.0}{8.0}$ -2.0 -6.7
17.1

1117+90 4268.42

$\frac{0.0}{8.0}$ -1.9 -5.4
15.1

Areas Cub Yds

Cut	Fill	Exc	Emb
		143.4	124.3

26.12	6.00		
-------	------	--	--

		25.1	2.4
--	--	------	-----

41.65	0.40		
-------	------	--	--

		35.2	43.1
--	--	------	------

0.60	51.27		
------	-------	--	--

		48.2	25.3
--	--	------	------

64.47	0.00		
-------	------	--	--

			195.1
--	--	--	-------

156.5	Sta 1112 + 156	1117 + 80	Exc 1089.4
-------	----------------	-----------	------------

177.03			
--------	--	--	--

			Class Solid Rock 1089.4 C.Y.
--	--	--	------------------------------

252.8	Haul 126.0	So. free	
-------	------------	----------	--

	"	134.5 N	"
--	---	---------	---

126.36			
--------	--	--	--

	"	444. from 1115 to 1117 + 90 =	1640
--	---	-------------------------------	------

	"	310. " 1116 + 80 + 1118 + 50 =	620
--	---	--------------------------------	-----

		Total Haul	2260
--	--	------------	------

218.3			
-------	--	--	--

135.63			
--------	--	--	--

		520	2160
--	--	-----	------

130.0			
-------	--	--	--

20.42	0.00		
-------	------	--	--

		5.0	12.0
--	--	-----	------

		1014.5	
--	--	--------	--

00			
----	--	--	--

48.55			
-------	--	--	--

		74.9	- 1/2 56.
--	--	------	-----------

		1089.4	
--	--	--------	--

		16.5	
--	--	------	--

40.84			
-------	--	--	--

		17.2	
--	--	------	--

		45.7	
--	--	------	--

Station Grade

1118 4268.77

L	C	R
$\frac{-0.9}{8.3}$	-2.6	$\frac{-5.3}{15.0}$

+45

$\frac{-6.1}{16.2}$	-10.7	$\frac{-17.0}{32.5}$
---------------------	-------	----------------------

+65

$\frac{-6.0}{16.0}$	-10.5	$\frac{-19.6}{36.4}$
---------------------	-------	----------------------

1118+95

$\frac{-9.0}{20.5}$	-14.8	$\frac{-32.0}{55.0}$
---------------------	-------	----------------------

1119+20

$\frac{-15.1}{29.7}$	-20.9	$\frac{-28.6}{49.9}$
----------------------	-------	----------------------

1119+85

05.5
+

$\frac{0.0}{8.0}$	-1.9	$\frac{-2.4}{18.1}$
-------------------	------	---------------------

1120+20

$\frac{+3.4}{8.9}$	00	$\frac{-9.4}{21.1}$
--------------------	----	---------------------

1120+40

$\frac{0.0}{8.0}$	-2.5	$\frac{-11.5}{24.3}$
-------------------	------	----------------------

+55

$\frac{-3.4}{12.1}$	-6.8	$\frac{-15.4}{30.1}$
---------------------	------	----------------------

1120+75 4278.40

$\frac{0.0}{8.0}$	00	$\frac{0.0}{8.0}$
-------------------	----	-------------------

Areas Cub Yds.

Cut Fill Exc Emb

45.7

51.99

Sta 1117 + 60 to 1120 + 75

327.8 Embilit 3509.2 Cub yds

341.40

3135.3 made from

261.5 Cuts

373.9 made from

364.70

measured Pit sp. 47

class $\frac{1}{3}$ Ca = 124.6 cu.

592.7

 $\frac{2}{3}$ Lo R = 249.31

70220

781.0

984.78

1246.3

00 50.69

Sta 1114 + 85 to 1120 + 40

5.9

54.2 Exc 9.3 Cu. Jo Rock

13.60 32.90

3.4

42.0

00 80.62

9.3

80.5

209.28

77.5

00 00

3509.2

150.6

J. H. H.

Station	Grade	L	C	R
1121	+05 4279.45	$\frac{+16.1}{12.2}$	+13.7	$\frac{+11.5}{10.9}$
	+35	$\frac{+22.2}{13.6}$	+18.9	$\frac{+16.7}{12.2}$
	+60	$\frac{+20.6}{13.2}$	+17.8	$\frac{+15.2}{11.8}$
1122		$\frac{+16.1}{12.0}$	+13.4	$\frac{+10.7}{10.7}$
	+60 0.50 +3.50	$\frac{+4.1}{9.0}$	+1.6	$\frac{0.0}{8.0}$
1122	+95	$\frac{0.0}{8.0}$	-2.2	$\frac{-8.0}{19.0}$
1123	+35	$\frac{-2.6}{10.9}$	-6.1	$\frac{-21.2}{38.8}$
	+70	$\frac{-3.4}{12.1}$	-6.2	$\frac{-11.2}{18.0} \frac{-37.5}{63.3}$
1123	+85	$\frac{-9.0}{20.5}$	-8.7	$\frac{-12.1}{20.0} \frac{-41.2}{68.8}$
1124	+15	$\frac{-28.8}{50.2}$	-23.1	$\frac{-22.4}{30.0} \frac{-48.2}{79.3}$
1124	+26 4290.68			

Areas Cubyds

Cut Fill Exc Emb

150.6

271.04

Sta 1120+75 to 1122+95

372.4 Exc 1785.7 Cubyds Solid Rock

399.41

354.2 Haul 146.0 Saffar

" 1686 N "

365.70

" 1100. from 1121+65 to 1119+40 = 2255

" 260. " 1122+106 to 1123+65 = 405

462.9

Machaul 2660

259.29

321.5

30.00

00

130 24.9

1674.6

00

57.70

111.1 5.9

1785.7

216.8

23489

316.5

253.44

169.3

356.11

953.9

1360.97

2269.2

3950.6

✓ 244

Station Grade

L

C

R

1124+45 4291.33

-28.4
+9.6

38.2

-48.0
79.0

+75

-28.5
+9.8

-41.4

-53.2
86.8

1125

-26.3
46.5

-31.7

-51.0
83.5

+20

-16.3
31.5

-29.8

-33.0 -45.8
32.0 75.7

+60

-14.4
28.6

-14.0

16.4 -27.0
13.0 47.5

+75

+3.42

-6.6
16.9

-10.5

-19.7 -21.0
22.0 38.5

1126

-5.0
14.5

-9.4
5.0

-13.5 -9.4
27.3

+30

0.0
8.0

-2.1

-6.6
16.9

+45

+28.0
8.7

0.0 0.3

-9.9
21.9

1126+75 4299.19

0.0
8.0

-3.0

-5.1
15.5

Areas Cub yds
Cut Fill Exc Emb
3950.6

2723.66

32429

3113.57

2520.6

2331.05

Sta 1122 + 6.0 to 1126 + 8.5

1485.5 Emb't 13826.0 Cub yds.

1679.75

13338.0 made from

1725.8 Cuts
488.0 made from

650.10

Measured Pit on L 1123.

305.3 Class $\frac{1}{3}$ Earth = 162.704
 $\frac{2}{3}$ L.R. = 325.31

449.04

3339

272.21

178.5

00 49.24

1.8 24.3

9.80 38.08

3.6 51.8

00 55.20

2.8 6.8
13826.0

8.2

✓ 44

Station Grade

1126+85 4299.55

L	C	R
+33		00
88	+11	8.0

Cu

22

1127

+96	+7.0	+41
10.4		9.0

122

+25

+16.0		+53
12.0	+10.2	9.3

193

+50

+3.42

+22.2	+17.3	+130
13.6		11.3

356

+75

+30.7	+246	+195
15.7		12.9

552

1128

+37.6	+31.3	+26.3
17.4		14.6

750

+30

+40.6	+37.6	+35.5
18.2		16.9

96

+51 4305.22

+41.4	+40.0	+39.0
18.3		17.8

104

1128+75

+41.4	+40.6	+40.5
18.3		18.1

106

1129

+3.50

+4306.93

+40.6	+40.3	+39.9
18.2		18.0

105

Areas Cubyds

Cut Fill Exc Emb

8.2

22.44 00

40.3 Sta 1126+30 to 1132+28

122.70

Exc. 11906.3 Cub. Yds. - See P. 48

146.5 Class Top measured

193.83

Loose Rock 1778.4 Cub. Yds.

Balance Solid Rock 10127.9 " "

254.6

356.19

Haul 148. So far

" 293.37. "

420.7

" 9520. from 1128+45 to 1124+80 = 39508

" 1706. + 1130 + 75 + 1132 + 90 = 3652

552.58

Total Haul 43160.

6060

756.40

9559

964.28

780.8

1043.60

938.7

1068.55

981.5

1051.43

956.1

6089.3

Station Grade

L

C

R

1129 + 25 4307.81
416

+39.5
17.9

+39.2

+39.0
17.8

+50 62

+37.6
17.4

+37.4

+36.8
17.2

+75 53

+35.7
17.0

+35.2

+34.5
16.6

1130 44

+33.5
16.4

+32.9

+32.1
16.0

+25 35

+31.4
15.9

+31.1

+29.9
15.5

+50 32

4330

+29.5
15.4

+28.7

+27.4
14.8

+75 17

+26.3
14.6

+24.7

+24.0
14.0

1131 18

+22.2
13.6

+20.0

+18.7
12.7

+25 00

27046

+16.4
12.1

+12.1

+9.3
7.0

+11.0
10.8

+50 4215.68

+10.1
10.5

+43

00
80

Areas	Cub Yds
Cut	Fill Exc Emb

6089.3

1013.72

906.6

944.62

841.1

872.16

772.0

795.38

707.8

733.47

645.6

660.97

562.6

554.41

454.2

426.60

307.2

236.88

146.8

80.18

63.1

11496.3

Station Grade

1131+70 4316.38

L C R
+10.7 +5.3 00
10.6 80

1132 4317.43

+7.5 +7.2 +4.7
9.9 9.2

+15

+4.0 +2.7 00
9.0 80

+28

00 -0.5 -12.3
80 20 25.5

+36

-2.4 -18.3
10.6 34.4

+50

-6.7 -7.7 -14.8 -32.3
17.0 18.0 55.4

+80

-14.1 -17.2 -24.2 -31.2 -46.0
28.1 16.0 14.0 33.0 35.0 76.0

1132+97

-24.7 -22.5 -20.3 -25.0 -40.4 44.9 46.2
44.0 8.0 36.0 38.0 48.0 64.0

1133+08

-22.9 -26.7 -24.8 27.2 36.8 43.3
41.4 20.6 23.5 25.0 71.9

+20 4320.43

-18.2 -26.1 -26.8 -30.6 35.2 41.8 39.8
34.3 12.2 13.0 34.0 35.0 66.7

Areas Cub. Yds
Cut Fill Exc Emb

11496.3

90.09

115.3

117.56

43.4

38.95 00

6.3 10.8

11661.3

00

67.05

245.03⁵⁹₄

11906.3

33.3

Sta 1132 + 15 1/2 1134 + 65

Emb. 53 + 5.7 Cuyds.

157.95

3883.3 Cy. made

151.8 from Cuts and Ditch
on L 1135 Balmer

427.41

made from measured
Pits opp 1135 + see P. 48
= 1442.4 Cuyds
East borrow.

765.7

46.0
76.0

950.84

Haul on borrow
mat = 2330 Cy.

792.7

+ 449.46
48.0 76.4

1567.18

Borrow to repair
wash out

677.1

1105 Cuyds East

Haul - 1280 yds

433
71.9

1759.95

783.2

44.8 398
350 667

1757.10

1149.4

4364.0

Station Grade

L

C

R

1133+45 4321.08

$\frac{-138}{277}$

-18.1

$\frac{-21.3}{389}$

+60

$\frac{-115}{242}$

-14.2

$\frac{-17.3}{33.0}$

1134+20

$\frac{00}{80}$

-1.6

$\frac{-4.6}{13.9}$

+65

+251

$\frac{+31}{8.8}$

+1.9

$\frac{00}{8.0}$

1135+30

$\frac{+51}{9.3}$

+4.2

$\frac{+3.4}{8.9}$

1136

4327.47

$\frac{+3.6}{8.9}$

+2.9

$\frac{+2.4}{8.6}$

Areas Cub Yds
Cut Fill Exc Emb

4364.0

725.58

342.4

506.92

600.6

00

33.62

15.7

18.7

28.36

00

5325.7

121.1

Sta 1134+20 to 1136 Exc 294.4 Cu.

Class Earth 294.4.

72.22

Haul 94.4 So. from

157.6

+ 200 from 1135 to 1134 = 300 Yds Haul.

294.4

49.38

✓ 49.38

Section 22 Ditches

Sta to Sta	Size	Cubic Yards		
		Eg.	L.R.	SR
1083 to 1086+50	Side DmL		194	65
1088+80 to 1091+45	Surf "	{ 1x2x100 1x3x165 }	129	129
1094+20 " 1095	Slope "	L 1x2x80	60	
1099+25	"	{ L 1x2x80 R 1x2x300 }	96	
1099+25 " 1102+80	Surf. "	{ 25x15x200 28x10x155 }	135	
1103 " 1104+20	Slope "	{ 1x3x30 1.5x3x90 }	33 10.0	5.0
1112+20 " 1112+75	"	1.2x3x55	73	
1118+45 " 1120+05	"	{ 1.5x3x30 20x3.5x60 1x2x70 }	155 5.2	5.0
1126 " 1132+30	Surf "	1.2x3.5x630	900	8.0
1133+50 " 1134+50	" " R 12x2x110		9.8	
		137.0	91.4	165

Ditch on L 1133+05 to 1137+70

Station	L	C	R	Areas	Cu Yds
1133+05 = 0		0.0		00	
+20	$\frac{60}{100} + \frac{33}{90}$	$\frac{+0.4}{120}$ 00		16.65	67
+85	$\frac{60}{100} + \frac{33}{80}$	$\frac{+18}{20}$ 00		2040	446
11415	$\frac{60}{110} + \frac{23}{90}$	$\frac{+24}{20}$ 00		2115	23.1
+60	$\frac{60}{150} + \frac{40}{110}$	$\frac{+46}{20}$ 00		5130	60.4
2425	$\frac{60}{170} + \frac{60}{100}$	$\frac{+69}{20}$ 00		7950	157.4
2495	$\frac{60}{160} + \frac{48}{100}$	$\frac{+50}{30}$ 00		5620	175.9
3445	$\frac{60}{150} + \frac{33}{100}$	$\frac{+26}{30}$ 00		3280	82.4
+65	$\frac{60}{140} + \frac{30}{110}$	$\frac{+30}{40}$ 00		3150	23.8
+95	$\frac{60}{110} + \frac{22}{80}$	$\frac{+20}{20}$ 00		1790	27.4
4+50	$\frac{60}{130} + \frac{18}{110}$	00		1170	30.1
4+65	0.0			00	3.3

Class A $\frac{1}{3}$ Ea = 2115 Cy

$\frac{73}{3} \text{ LOR} = 423.1$

500 yds hauler 250 = 1250 haul

Box Culverts

Stations	Size - inside	Ft. B.M.
1087+65	1' x 1'6" x 61	1170.
1097+70 Framed	4' x 6' x 121	19270.
1102+50	2' x 34" x 83'	2898.
1110+65	1' x 1'6" x 39	752
1118+45	1' x 2'6" x 49	1254
1132+85	2' x 3'8" x 74	2988
	Total	28332

Clearing

Station to Station	Width	Sq. ft.
1085 Borrow Pit on R	85 x 325	27625 ✓
1083 1092	60	54000 ✓
1092 1095	55	16500 ✓
1095 B.P. on L	130 x 240	31200 ✓
1097 " " R	40 x 190	7600 ✓
1097+70 " " L	50 x 180	9000 ✓
1095 " 1108	50	65000 ✓
1108 " 1122	55	77000 ✓
661 Area =		287925 ✓

SECTION 22

PAGE	Acres	Excavation - Cub. Yds.				Total
		Total Cut	Earth	Loose Rock	Solid Rock	
50		1702.4 ✓		933.9 ✓	768.5 ✓	
51						152.4 ✓
51						1670.1 ✓
52		5345.8 ✓		820.0 ✓	4525.8 ✓	
53						3799.0 ✓
54						6075.2 ✓
55		1968.8 ✓		488.8 ✓	1480.0 ✓	
56						12220.2 ✓
57		10279.3 ✓		3083.8 ✓	7195.5 ✓	
58						4209.0 ✓
59		1760.0 ✓			1760.0 ✓	
60						2099.8 ✓
61						195.1 ✓
62		1089.4 ✓			1089.4 ✓	
63		9.3 ✓		9.3 ✓		3509.2 ✓
64		1785.7 ✓			1785.7 ✓	
65						13826.0 ✓
66		11906.3 ✓		1778.4 ✓	10127.9 ✓	
68						5325.7 ✓
68						1105.0 ✓
69		294.4 ✓	294.4 ✓			
70		239.9 ✓	132.0 ✓	91.4 ✓	16.5 ✓	
70	661 ✓	634.6 ✓	211.5 ✓	423.1 ✓		
661 ✓		37015.9 ✓	637.9 ✓	7628.7 ✓	28749.3 ✓	54186.7 ✓

SUMMARY

	Cu. Yds.	Cu. Yds.	Borrow-Cu. Yds.	Cu. Yds.	F.R.M.
bankt Yds.	Bank made from Cuts	Shrinkage deducted	Earth Loose Rock	Hauled 100'	Lumber in Culverts
				2490 ✓	
524 ✓	152.4 ✓				
70.1 ✓	1670.1 ✓			14340 ✓	
99.0 ✓	3799.0 ✓				
75.2 ✓	1695.0 ✓	167.0 ✓	2375.5 ✓	1837.7 ✓	2480 ✓
					1000 ✓
220.2 ✓	10226.1 ✓	99.7 ✓	1262.9 ✓	631.5 ✓	1270 ✓
					21690 ✓
209.0 ✓	4209.0 ✓				3490 ✓
99.8 ✓	1353.8 ✓	37.3 ✓	354.3 ✓	354.4 ✓	
95.7 ✓	195.7 ✓				
9.2 ✓	3135.3 ✓		124.6 ✓	249.3 ✓	2260 ✓ 2160
26.0 ✓	13338.0 ✓		162.7 ✓	325.3 ✓	2660 ✓
25.7 ✓	3883.3 ✓		1442.4 ✓		43160 ✓
05.0 ✓			1105.0 ✓		2330 ✓
					1280 ✓
					300 ✓
					1250 ✓
					28332 ✓
86.7 ✓	43657.1 ✓	304.0 ✓	6827.4 ✓	3398.2 ✓	100000 ✓ 99900 ✓
					28332 ✓

SECTION 22.COST.

CLEARING	6 ⁶¹ ACRES	@	\$ 35.22	=	231.35
EXCAVATION, EARTH,	637.9 CU. YDS.	@	0.14	=	89.31
"	L. ROCK 7628.7	" "	" 0.32	=	2441.18
"	S. ROCK 28749.3	" "	" 0.80	=	22999.44
BORROW, EARTH	6827.4	" "	" 0.12	=	819.29
"	L. ROCK 3398.2	" "	" 0.30	=	1019.46
HAUL, 100 FT.	99900	" "	" 0.015	=	1498.50
LUMBER	28332 FT. BM.	"	\$ 12.00	=	339.98
TOTAL =					\$ 29438.51

ST.

23.35

89.31

441.18

999.44

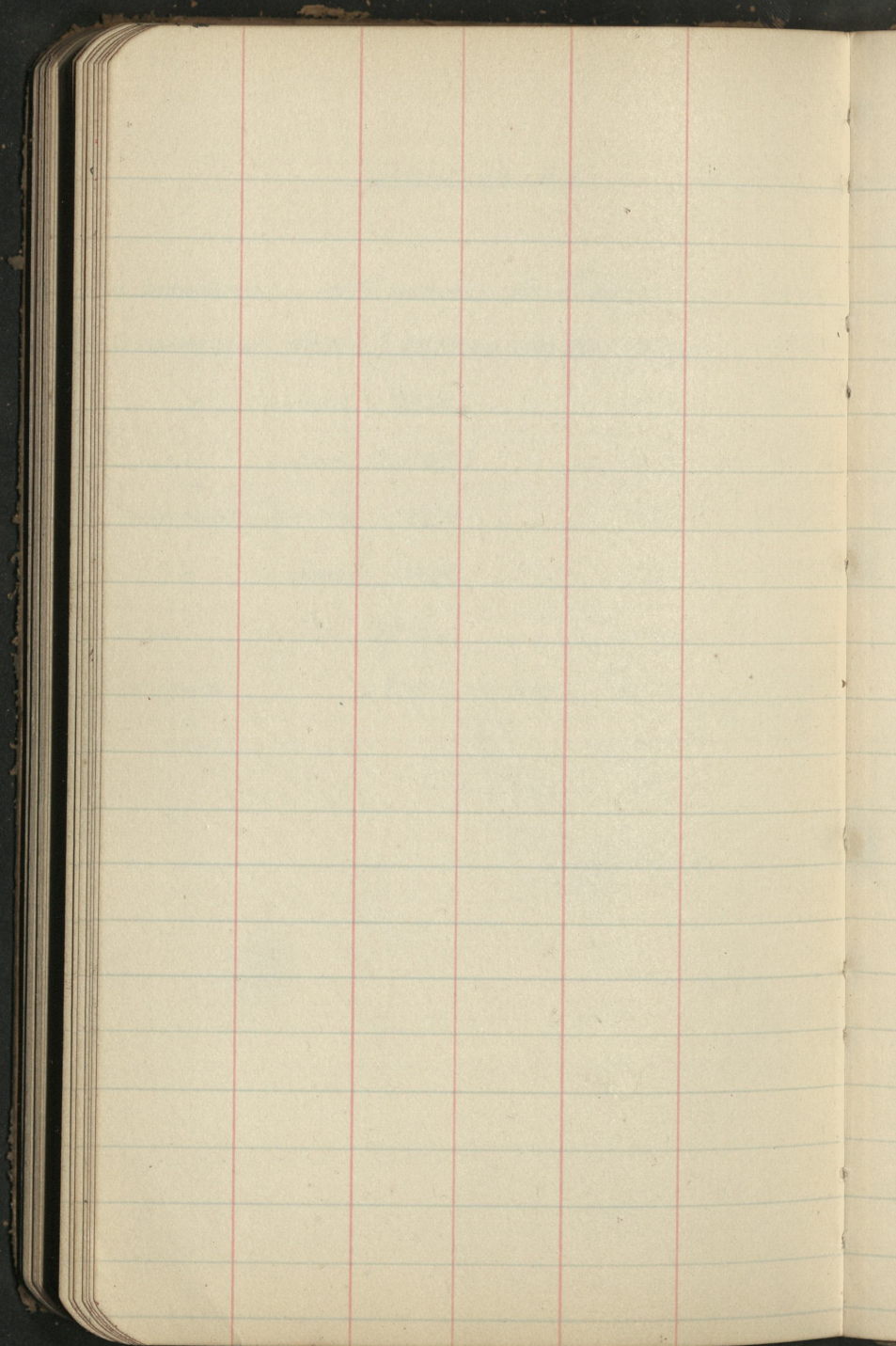
819.29

719.46

48.50

239.98

38.51



97

98

99

9

10

10

10

10

10

10

1015+86

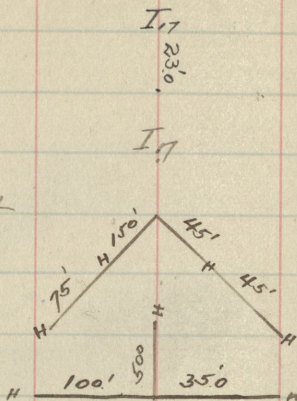
P.S

1016+09 9x10 R

1020+35⁹ P.T.

1020+71² Ford P.S.

1020+894 Back 9x10 L

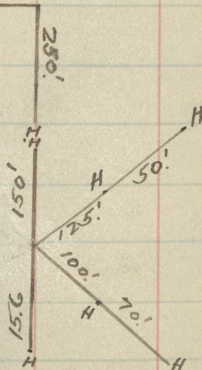


1024+53⁸ P.T.

P.S

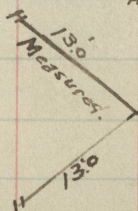
1029+97⁵ 9x10 R

H 50' H 90'



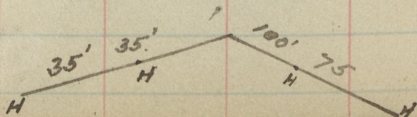
1033+80 P.T.

1033+95⁵

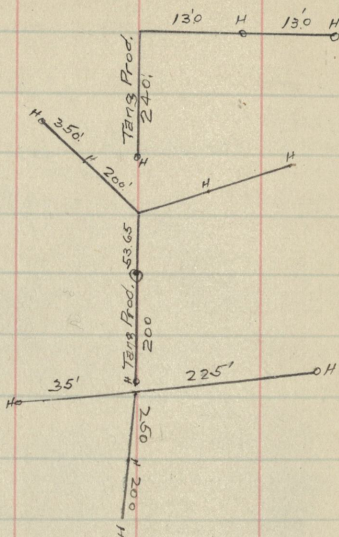


1036+61

1037+02 P.C. 80 L



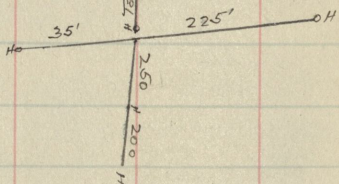
1075+47 P.S. 7X12L



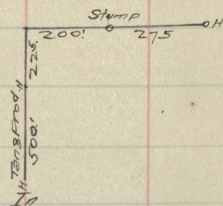
1079+58³

1080+12

1084+64⁴



1090+46 P.S. 9x10R

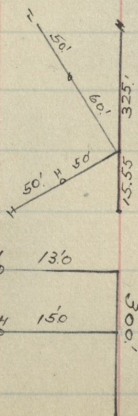


1095 P.O.C.

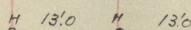
1103+98⁵ P.S.C. 9x10R In

1104+88⁵ P.T.

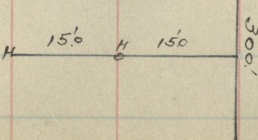
1105+04 P.S. 9x10L



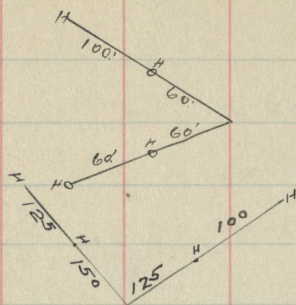
1109+54 P.T.



1113+15 P.S. 9x10L

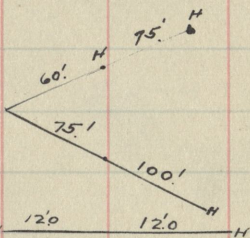


1116+612 P.T.



1124+26 P.C. 20R

1128+51 P.T.



1144+44 P.C. 70L

Reference Points

837+13 P.C. 6° R H 15.0' H 15.0' H

840+70.3 P.T. H 12.0' 12.0' OH

843+97 P.C. 6° L

849+98.7 P.T.

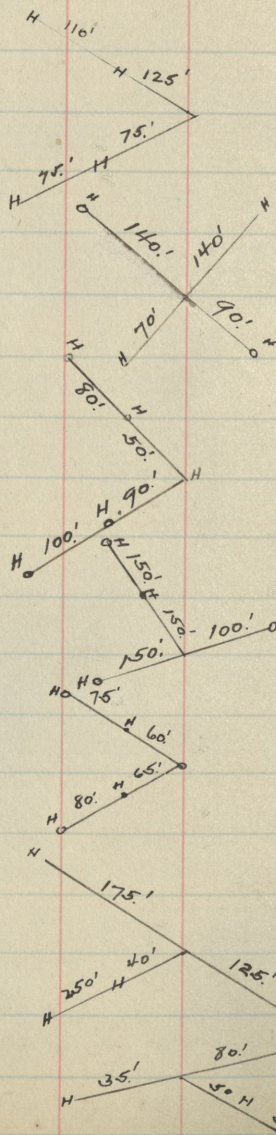
853+54 P.S. 8x12 L

858+28.5 P.T.

861+30 P.C. 8° R

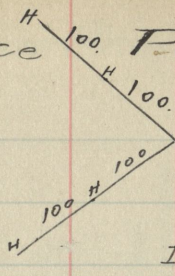
865+61.3 P.T.

866+57 P.C. 4° L



Reference Points

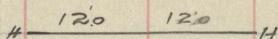
871+037 P.T.



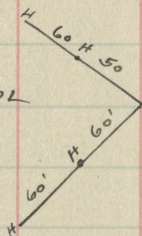
872+74 P.S. 8X12 R

In

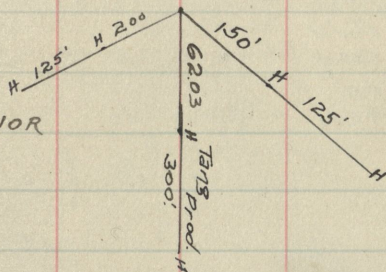
876+729 P.T.



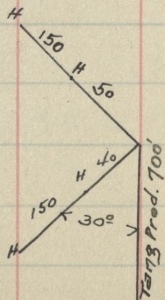
877+69 P.S. 8X12 L



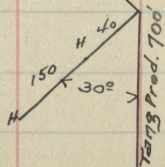
884+898



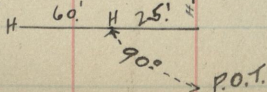
885+52 P.S. 9X10 R



890+109 P.T.



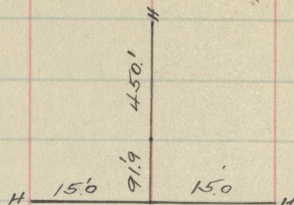
894+40 P.S. 8X12 R



Reference Points

899+52

900+44 P.S. 8x12 L



905+31⁸ P.T.



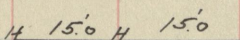
919+22 P.C. 6° R



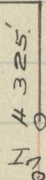
923+85⁸ P.T.



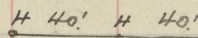
936+36⁴ P.S.
7x12 R



940+27⁴ Ford
940+29⁴ Back = P.T.

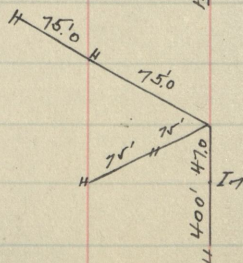


947+37⁶ P.S.
9x14 L



953+18 P.T.

953+65 P.S.
9x12 R



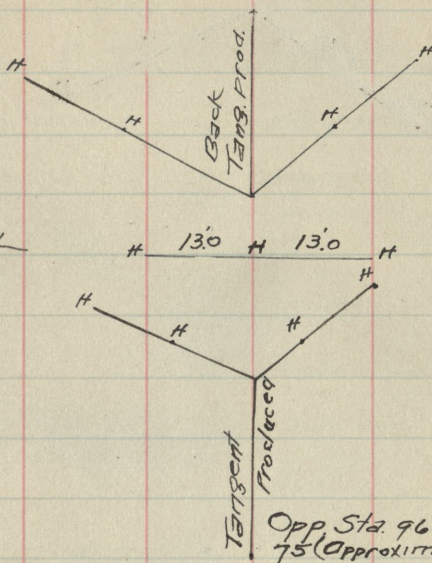
Reference Points

78

960+67⁴ P.T.

961+49 P.C. 8° L

963+75 P.T.

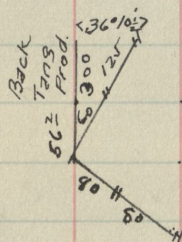


P.S.
964+89 9X10R

H 13'0" H 13'0"

969+07⁸ P.T.

969+64 P.S. 7X12L



979+21² P.T.

H 13'0" H 13'0"

5

9

98

99

100

101

102

103

104

105

106

107

108

109

110

111

112

113

114

BENCHMARKS

Station	Distance	Reference	Elevation
975+50	70' L	On Hub	3829.12
985	40' L	" "	3855.85
994+60	35' L	" "	3889.59
1002	75' L	" "	3909.31
1009+75	60' R	" "	(3932.20 Ford 3932.78 Back)
1039	40' L	" "	4029.96
1041+50	40' L	" "	4032.80
1055	75' L	" "	4067.69
1067+75	R	" "	4114.11
1078	35' L	" "	4141.47
1089+25	80' L	" "	4180.79
1091+40	60' L	" "	4196.39
1095	60' R	" "	4193.13
1099	50' L	" "	4209.38
1103+40	40' L	On Stump	4230.01
1110+40	50' L	" Hub	4250.42
1119	75' L	" "	4273.90
1122+20	40' R	" "	4286.90
1126	70' L	" "	4301.41
1135	L		4333.21
1146+20	35' R		4349.08

